5538

Walk Around

F-8 Crusader

Don Greer

Walk Around Number 38

squadron/signal publications

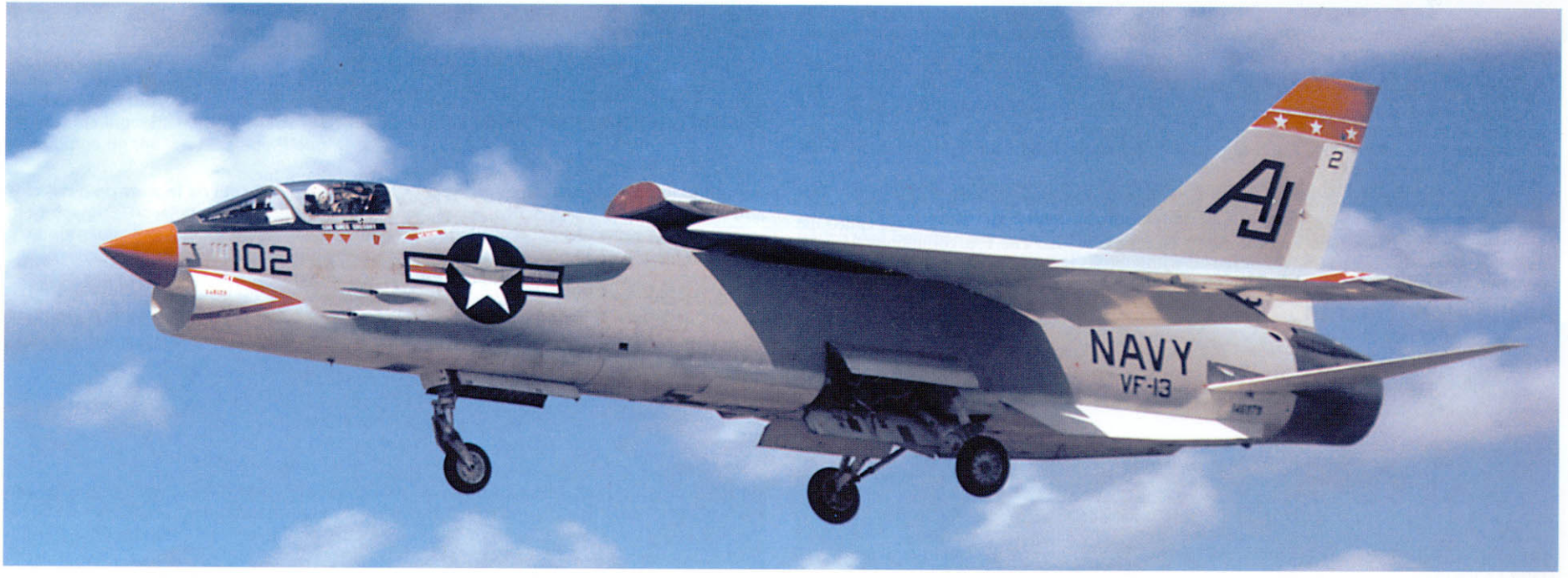
Walk Around

F-8 Crusader

By Ed Barthelmes

Color by Don Greer and Darren Glenn

Illustrated by David Gebhardt



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Introduction

In September of 1952, the US Navy Bureau of Aeronautics (BuAer) called for a new carrier-based supersonic fighter. It was to meet typical Navy requirements that included rugged construction for withstanding arrested carrier landings and folding wings. The Navy selected Chance Vought Corporation's **V-383** design over eight competitors on 29 June 1953. The prototype was designated the **XF8U-1 Crusader**.

The Crusader began setting records from 25 March 1955, when it was the first aircraft to reach supersonic speed on its initial flight. It won the 1956 Thompson Trophy by setting a national speed record of over 1000 MPH (1609 KMH). In mid-1957, Crusaders made the first carrier-to-carrier transcontinental flight and set a transcontinental speed record. The F8U was awarded the Collier Trophy for its aviation advancement contributions in 1957. The next year, BuAer issued its first 'Certificate of Merit' to Vought for the F8U.

The original **F8U-1 (F-8A)** was designed as a day fighter armed with four 20MM cannon, provisions for Air-to-Air Missiles (AAMs) on 'cheek rails,' and a retractable rocket pack. Improved electronics gave the **F8U-1E (F-8B)** a limited all-weather capability. Camera equipment replaced guns and weapons systems on the **F8U-1P (RF-8A)** photoreconnaissance variant. The succeeding **F8U-2 (F-8C)** had a more powerful engine, ventral stabilizing fins, and four AAMs. An even more powerful engine went into the **F8U-2N (F-8D)**, plus improved radar and avionics for limited all-weather and night attack capabilities. The final production variant was the **F8U-2NE (F-8E)**, which had the AN/APQ-94 radar, AGM-12 Bullpup air-to-surface missile capability, and two wing pylons each capable of carrying 2000 pounds (907 KG) of stores. The F8U became the F-8 when the unified tri-service aircraft designation system replaced the manufacturer-based system on 18 September 1962.

The French Navy (FN) ordered 42 **F-8E (FN)** Crusaders – based on a modified F-8E – in early 1962. Changes included adding a boundary layer control system and larger horizontal tail surfaces. These reduced its landing speed for the smaller French carriers. The French upgraded the Crusader several times to the final **F-8E (FN) P (*Prolongué*; Prolonged)** configuration.

Vought remanufactured 395 F-8 airframes starting in 1965. Service life extension changes were incorporated, while the weapons system and load-carrying capability were significantly improved. Remanufacturing began with the RF-8A becoming the **RF-8G**. The F-8D was then remanufactured into the **F-8H**. The F-8E was rebuilt into the **F-8J**, then the F-8C to the **F-8K** and the F-8B into the **F-8L**.

The Crusader had the highest kill ratio of any US Navy aircraft during the Vietnam War, which earned it the revered title of 'MiG Master.' F-8s served with active Navy squadrons until 1976 and with US Naval Reserve squadrons until 29 March 1987. The Crusader remained the French navy's front line interceptor until 15 December 1999. The F-8 community is most proud that it was the last US fighter designed with guns as its primary weapon. It will always be known at 'THE LAST OF THE GUNFIGHTERS.'

Acknowledgements

The author sincerely wishes to thank all the people and organizations that provided photos and other material to complete this book. Special appreciation is noted to Brian Nick, Tom Weinel, Dick Adkins, and the Vought Aircraft Industries Retiree Club for their assistance. Special thanks also go to the support given by my wife Judy and family: Matt, Sarah, and Emily.

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Tom Weinel
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Hideki Yamauchi
US Navy
Vought Aircraft Industries
Vought Aircraft Industries Retiree Club
Detail & Scale
JEM Aviation Slides
Marine Nationale (French Navy; FN)

Dedication:

This book is dedicated to everyone involved in the F-8 Crusader's design, development, manufacture, and operation. Special thanks go to the Vought Aircraft Industries Retiree club, whose cooperation in preparing this book was extremely helpful. I found it amazing that – almost 50 years after the F-8's first flight – you could still sense the pride they have in the product they helped produce. I also want to mention an individual that was involved in the Crusader's operation, RAdm Wilson 'Bud' Flagg, USNR (retired). He was the worldwide high-time F-8 pilot, with over 3200 hours. Ironically, Flagg was on American Flight 77 when it crashed into the Pentagon – his last duty station – on 11 September 2001.

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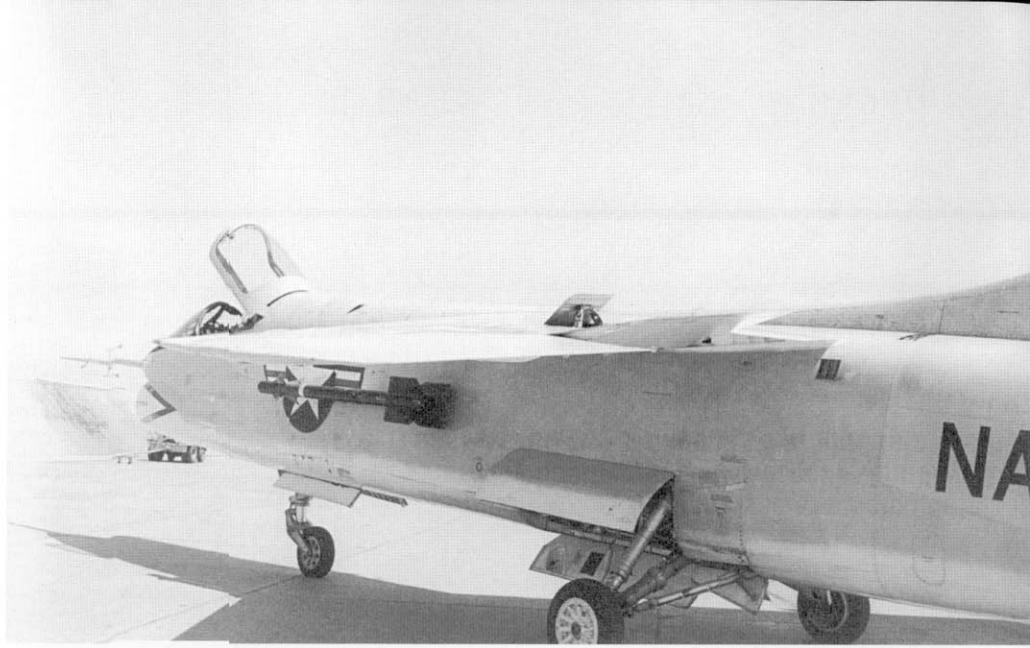
(Front Cover) An F-8C (NP-443/BuNo 147029) is spotted on the flight deck of the aircraft carrier USS BON HOMME RICHARD (CVA-31). This Crusader was assigned to Fighter Squadron Twenty Four (VF-24). Lt Phillip R. Wood flew this F-8C when he shot down a North Vietnamese MiG-17 on 19 May 1967.

(Previous Page) A VF-13 F-8C (AJ-102) prepares to land at Naval Air Station (NAS) Cecil Field, Florida during the late 1960s. Its Bureau Number (BuNo) is believed to be 146979. This Squadron was assigned to Carrier Air Wing Eight (CVW-8) from September of 1966 until October of 1969, when VF-13 was disestablished.

(Back Cover) The last operational US Crusader was this RF-8G (AF-701/BuNo 146860). It was assigned to Light Photographic Squadron Two Hundred Six (VFP-206) at Naval Air Facility Washington (Andrews Air Force Base, Maryland) when it was retired from service on 29 March 1987.

An F8U-1 (02/BuNo 142410) of Air Test and Evaluation Squadron Three (VX-3) participates in early carrier trials aboard USS FRANKLIN D. ROOSEVELT (CVA-42). This variant was re-designated the F-8A on 18 September 1962. Early Crusaders lacked factory-installed in-flight refueling capabilities, which is demonstrated by this aircraft's absence of the refueling bulge on the left fuselage (Vought)



A roll augmentation spoiler was installed flush with the wing's upper surface, forward of each aileron, on F8U-1 BuNo 143772 and subsequent aircraft. The spoilers increased the roll rate at both low and high airspeed. (Vought)

This head-on view of an F8U-1 illustrates the Crusader's unique shoulder-mounted swept wing design. The wing had a variable angle of incidence, which could be raised 7°. In this configuration, the effects of the leading edge droops, flaps, and 5° wing anhedral produced maximum lift. The leading edge droops (also called leading edge flaps) lowered to increase wing camber (surface curvature) when the wing was raised. This increased wing area and improved handling for low speed flight, including take offs and landings. (Vought)

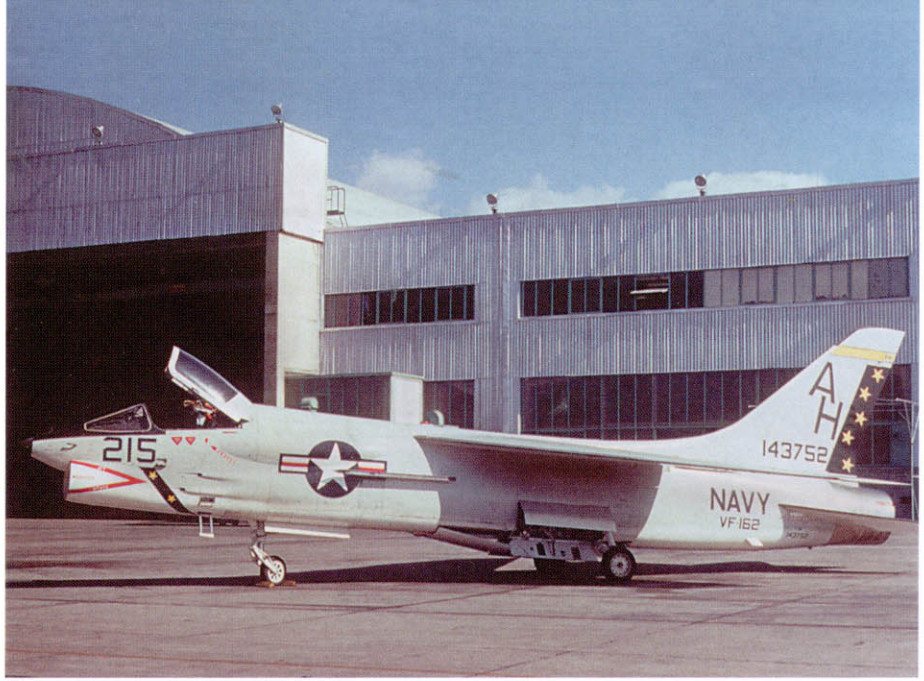
The F-8 design's clean lines are evident in this image of the airframe undersurface. The catapult attachment point was a slot located on the fuselage centerline at station 331, which was between the nose and main wheel wells. This station was 331 inches (840.7 cm) from the forward reference point. Wing and tail surface leading edges were left in natural metal. (Vought)

The first Marine squadron to receive the F-8 was Marine Fighter Squadron One Twenty Two (VMF-122), ironically nicknamed the 'Crusaders,' in December of 1957. An F8U-1 (DC/BuNo 145348) is ceremoniously 'handed over' to the Squadron Commander. The marines flew Crusaders until 1976, when they were phased out of the Reserve squadrons. (Vought)

The F-8's wing had a 42° sweep back angle, which reduced drag at supersonic speeds. Total wing area was 375 square feet (34.8 M²). Outer wing panels were folded for storage aboard aircraft carriers and were not equipped with movable control surfaces; however, they still had the leading edge droop that resulted in a 'dog tooth' outer wing extension. (Vought)

The fire control radar antenna was located inside a nose cone mounted to fuselage bulkhead frame 149. Radomes for Magnavox AN/APQ-83 radars are exposed on these F-8Ds awaiting remanufacture to F-8H standard, revealing the inner fiberglass domes. Four cockpit and radar system cooling vents were located on the forward fuselage's right side. (Vought)

An in-flight refueling probe was installed on F8U-1 BuNo 143702 and subsequent Crusaders, which resulted in a 'bulge' on the fuselage's left side. The strike camera/viewfinder was mounted in the nose at the 3 o'clock position. The yaw indicate vane was mounted in front of the windshield on both the F8U-1 (F-8A) and F8U-1E (F-8B). The E suffix on the F8U-1E designation stood for electronic equipment. (Vought)



This F8U-1 (AH-215/BuNo 143752) of VF-162 'Hunters' shows this variant's typical configuration with the single rocket rail. The Crusader was painted in the standard period scheme of Light Gull Gray (FS36440) over Insignia White (FS17875), with Insignia White control surfaces and wheel wells. VF-162 was based at NAS Miramar, California. (JEM)

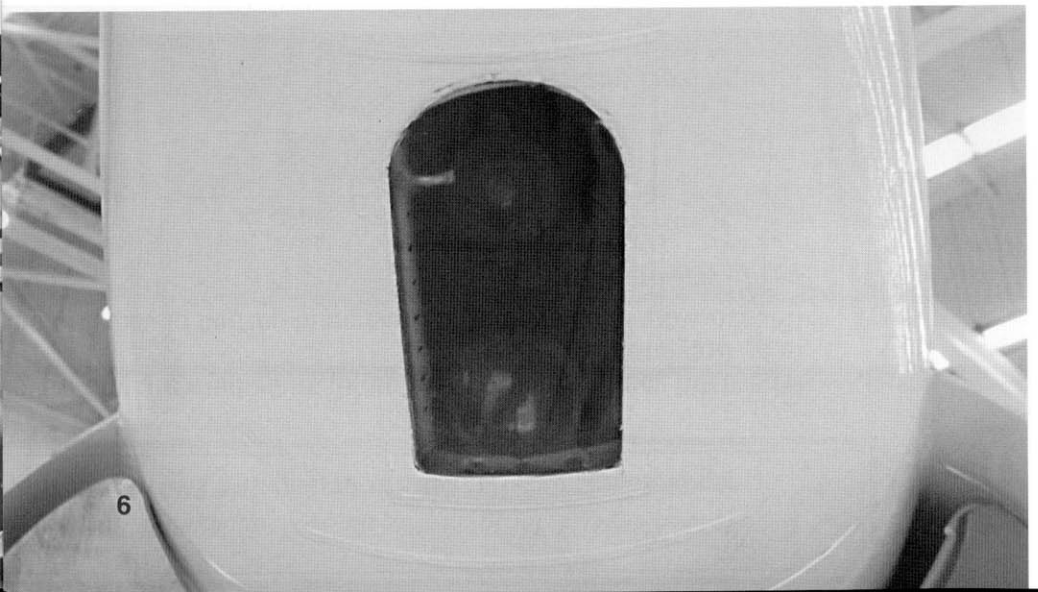
The F-8E/J's right nose side had four cooling vents, as did previous variants. The vents' shape differed on the F-8E/J, which resulted from the tapered fairing required to blend the larger diameter radome to the fuselage. (Trombecky)

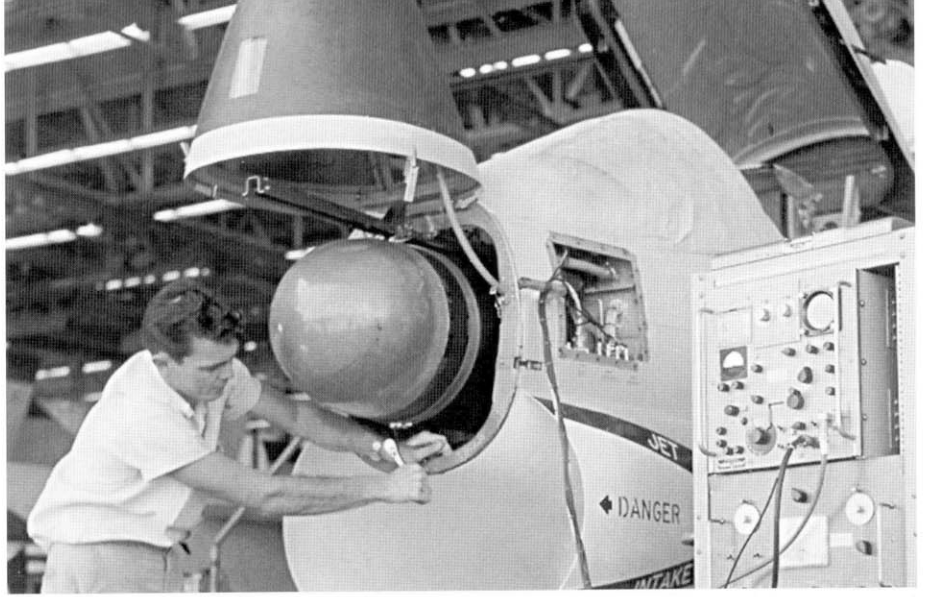
This F-8H's nose profile shows the uneven taper of the upper and lower nose cone surfaces. This resulted from the oval cross section at the fuselage to nose cone interface. The early style flat pitot tube was retained on the F-8H after remanufacture, along with three small cooling vents for the radar system. (Detail & Scale)

The F-8E/J's left side nose had four radar cooling vents as opposed to the three vents used on other variants. The flat style pitot tube was replaced with a more streamlined Altitude Identification and Measuring System (AIMS) design, which was repositioned below the right windshield panel. This tube provided input for the AAU-19A altimeter. (Trombecky)

The inlet duct had an oval cross section at its leading edge. This duct ran aft under the cockpit and curved upward to interface with the engine. Inlet trunking segments were sealed at the fabrication seams to prevent air bypass. The duct bypass is located on the trunk's left side (right in this image). An auxiliary air bleed for the environmental system heat exchanger was located above the duct bypass. (Nick)

A lower nose cone window was installed on the F8U-1N (F-8B) and subsequent fighter variants and on all reconnaissance Crusaders. This window had a circular top and a flat bottom. It provided forward vision for the gun camera and the pilot's viewfinder on fighter variants, while RF-8s used this to provide forward vision for the oblique camera viewfinder. (Weinel)





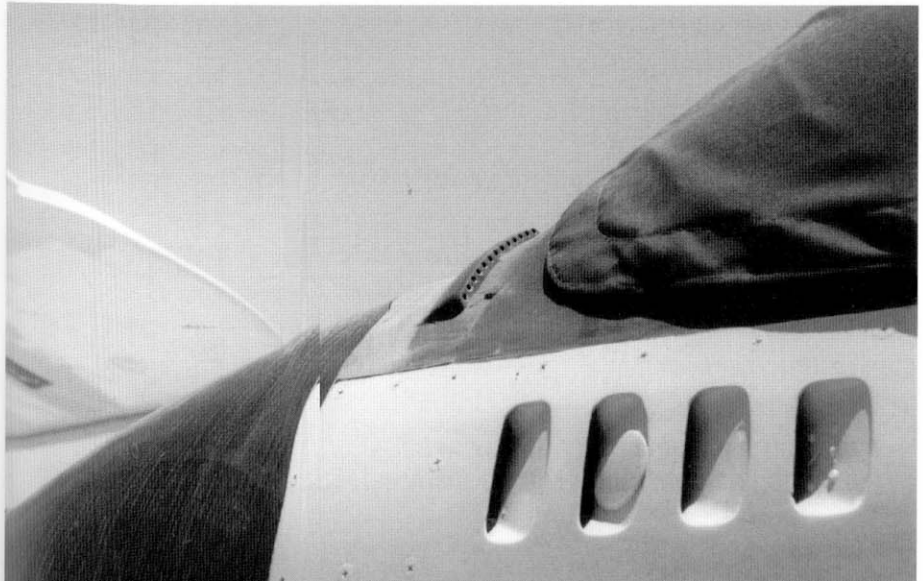
A small, overall cross section nose was featured on all Crusaders except the F-8E, F-8J, and F-8E (FN) variants. The AN/APS-67 radar set mounted in the nose of this F8U-2 (F-8C) has a substantial amount of clearance compared to the larger diameter AN/APX-94 radar set. (Vought)

A deck crewman lies within a Crusader's engine inlet. F-8Es were equipped with the Magnavox AN/APQ-94 search and acquisition radar, which had a 21-inch (53.3 cm) diameter dish. To accommodate this larger dish, a circular cross section nose was utilized. This added an additional three inches (7.6 cm) to the Crusader's overall length. The air intake's sharp edge profile reduced buffeting and enhanced boundary layer separation at high speed. (Gottschalk via Mutza)

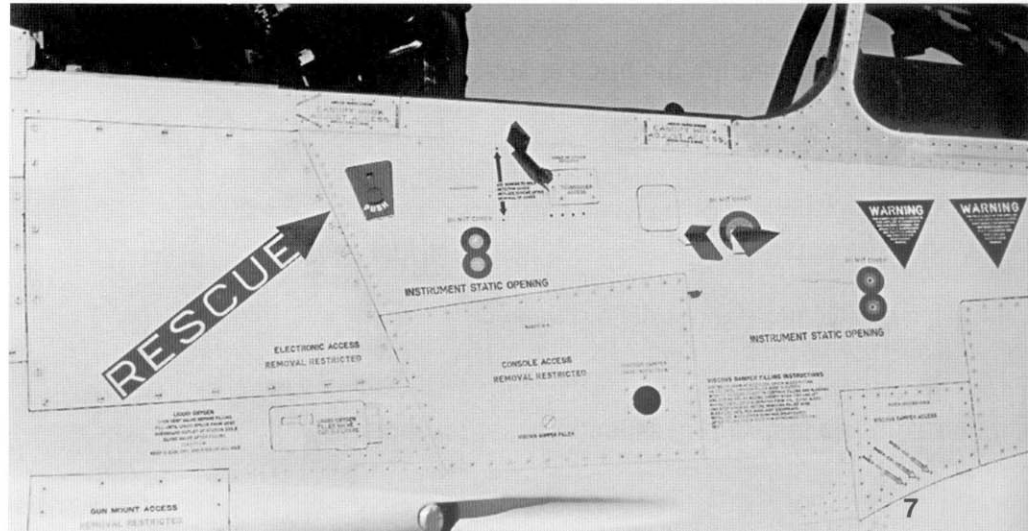
F-8E, F-8J, and F-8E (FN) Crusaders had the 21-inch diameter radar scanner, which required a larger circular nose cone. There was little clearance between the scanner dome and the nose cone. The relative size difference is apparent when compared to the F-8C's AN/APS-67 radome configuration. (DR via Gall)

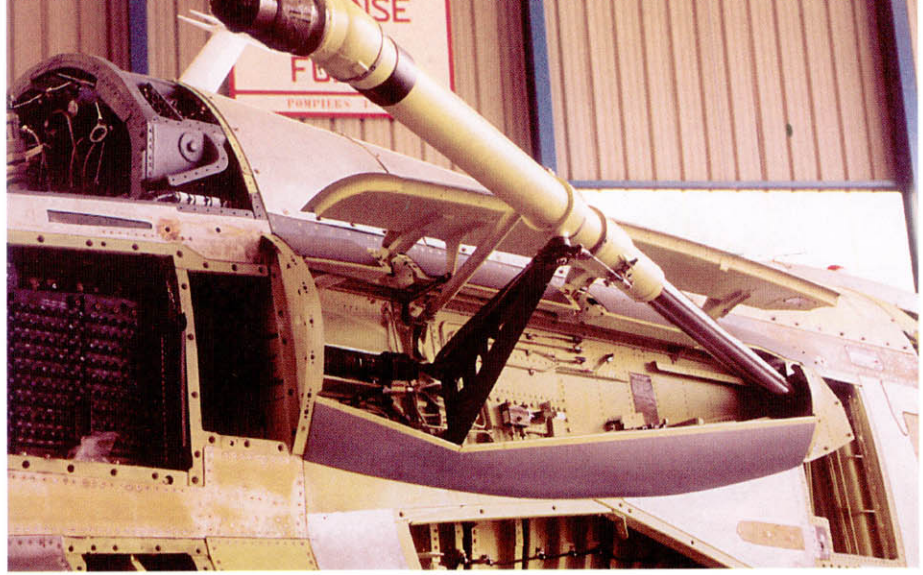
F-8Es and F-8Js had the pitot tube mounted on the center of the 21-inch diameter nose cone. The AN/ASS-15 Infrared (IR) sensor was mounted atop the fuselage just aft of the nose cone seam and at the base of the center windshield panel. All three access steps and both canopy release handles are extended. The gun blast ports have a pronounced contour. (Matsuzaki)

F-8Es and F-8Js were equipped with a rain repellent dispenser nozzle located in front of the windshield's center and left portions. Depending on rainfall rate and air speed, a single application of repellent provided improved visibility for ten to 30 minutes. (Dann)



Each F-8 had two Bright Red (FS31136) warning triangles below the windshield's aft edge. The front triangle was for the ejection seat and the aft triangle was for the canopy jettisoning system. Two Bright Red circles that appear like a figure '8' outlined the static port sensor openings. The Bright Red RESCUE arrow was 20 inches (50.8 cm) long and three inches (7.6 cm) wide at its widest point. (Vought)



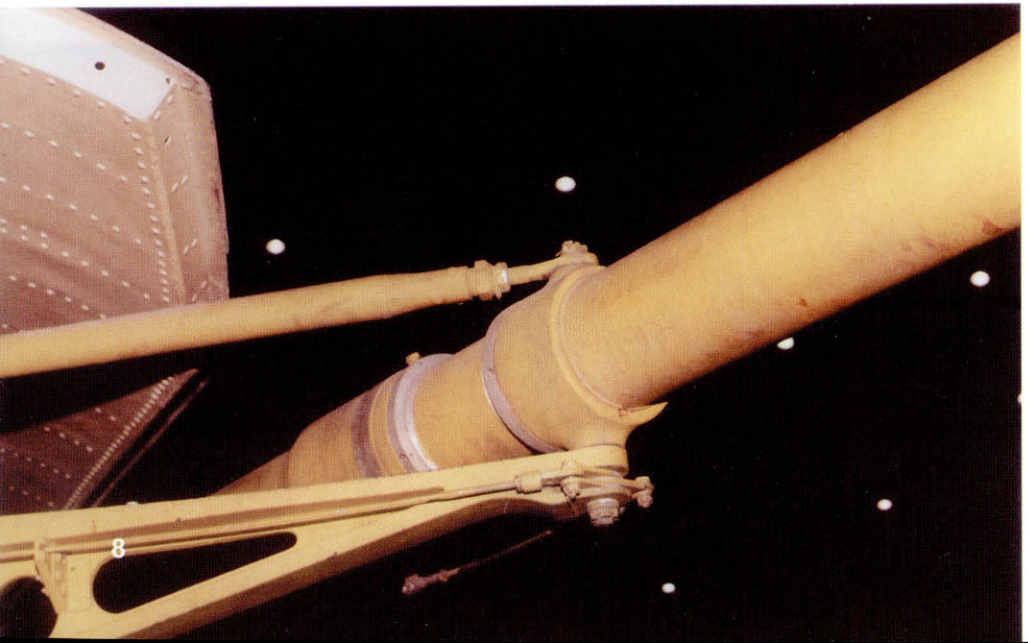


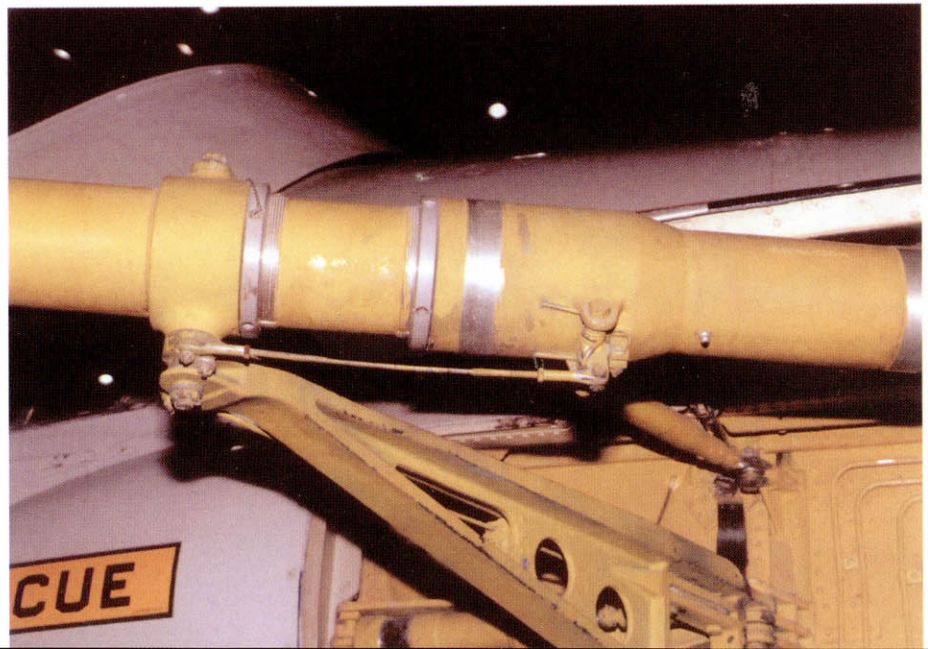
Improved avionics was the primary difference between the F8U-1 (F-8A) and the F8U-1E (F-8B). The F8U-1E was equipped with the Magnavox AN/APS-67 radar scanner, which replaced the F8U-1's Sperry AN/APG-30 gun ranging radar. The F8U-1E was externally distinguished by the new one-piece all-plastic 'Fabrilite' radome, which replaced the earlier variant's combined metal/plastic radome. (Vought)

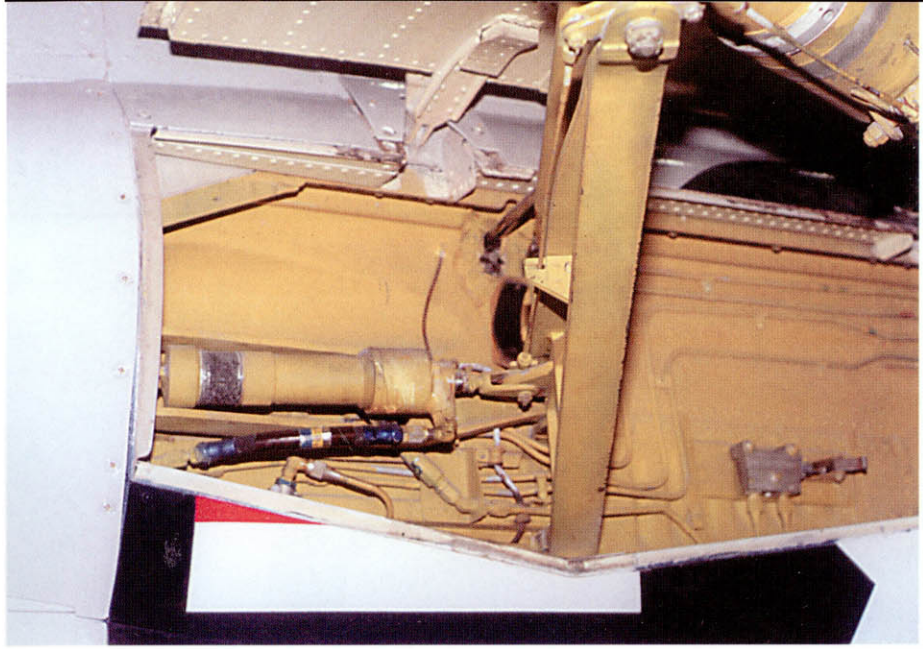
In-flight refueling equipment was incorporated into all Crusaders starting with F8U-1 (F-8A) BuNo 143702. The MA-2 probe nozzle consisted of a cam and groove locking mechanism, which sealed the drogue to the nozzle. Three locking fingers held the drogue in place until fuel transfer was complete. The probe extended 40 inches (101.6 cm) from the fuselage and abeam of the pilot (Parotte via Gall)

A probe support rod was connected atop the main probe connector housing. The main locking pin tie rod connector ran along the probe support 'A' frame's upper edge and connected to a pivoting transfer cam on the probe's lower surface. Variable tie rod ends provided for proper length adjustment. (Nick)

The main support 'A' frame was made of cast aluminum and was hinged to the fuselage at station 244. A pivoting transfer cam was mounted on the 'A' frame outer hinge, which connected to locking pin tie rods. The locking pin was located at the probe connector housing's lower aft end, which was on the probe's lower surface. (Nick)

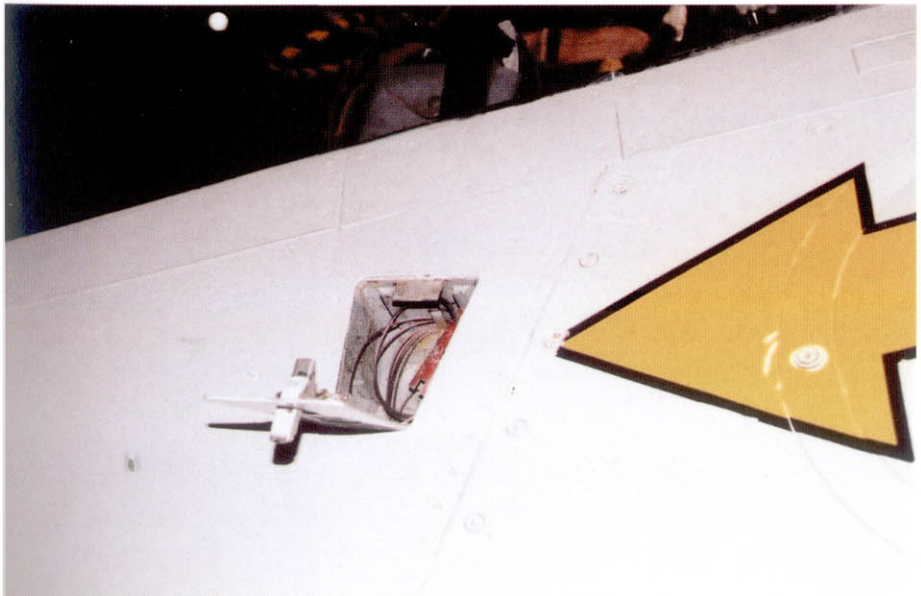


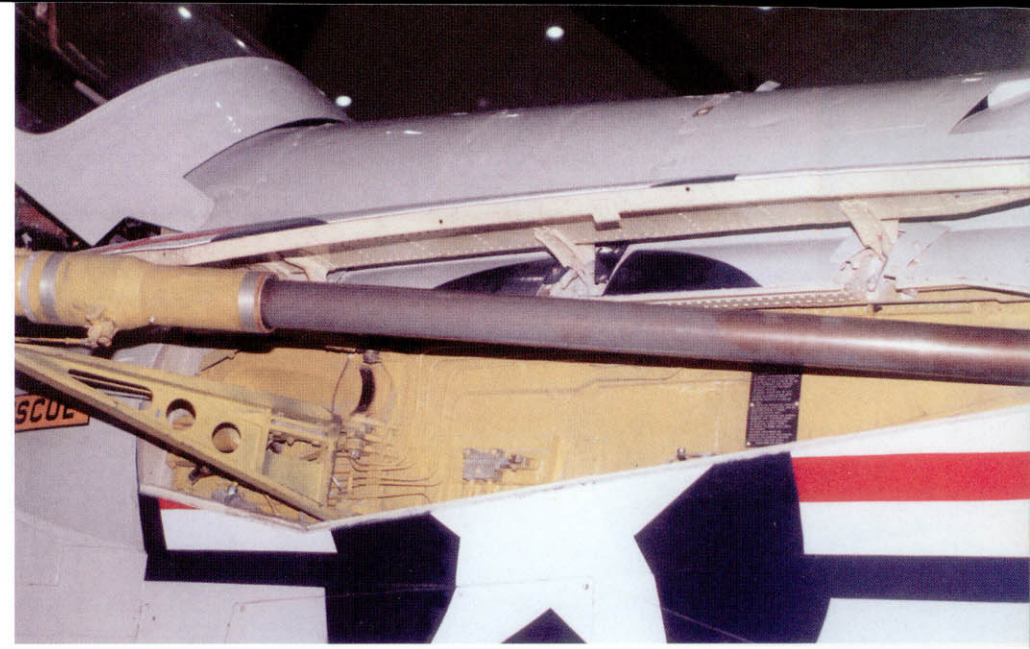




The main probe-actuating cylinder was attached to the refueling probe compartment's front wall. The door actuating cylinder was mounted on a bulkhead behind the rear wall that protruded to raise and lower the door. The door retract sequence valve was mounted behind the probe support 'A' frame at the bottom of the compartment. (Nick)

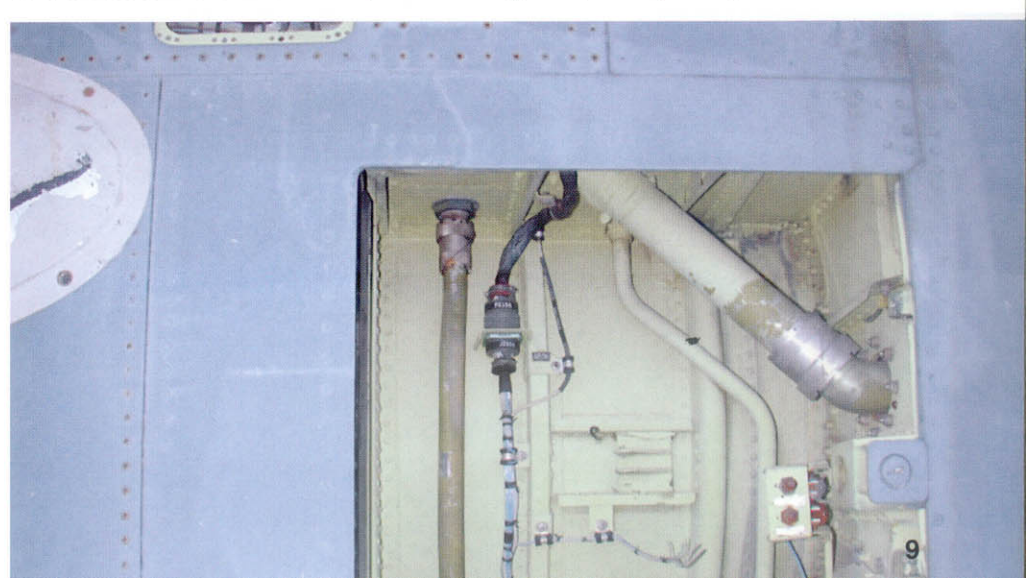
Emergency canopy jettisoning actuators were located on both fuselage sides. These actuators were approximately eight inches (20.3 cm) below the canopy sill and in line with the pilot's seat. Pulling the Red rescue handle fully extended the safety lanyard, which released the emergency canopy locks and allowed the canopy to open. (Nick)





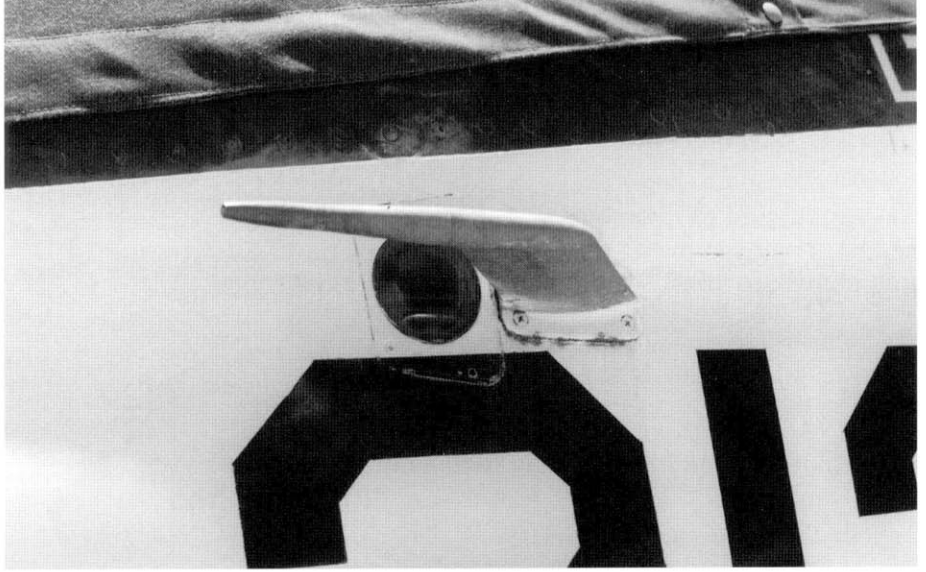
The in-flight refueling probe was mounted on the left side of the fuselage, directly above the gun bay and aft of the cockpit. The probe assembly was semi-submerged into a cavity and covered with an elliptical blister. The probe pivoted at the aft end and was extended by hydraulic power. (Nick)

All Crusaders had the intake duct bypass door located on the left fuselage side just aft of the in-flight refueling probe housing. This door had an angular configuration at the lower forward edge on F-8 fighters; RF-8 reconnaissance aircraft had a square door. The aft-hinged door was removed on this Crusader. It was opened either manually or automatically to reduce intake duct ram air pressure at high airspeeds. (Weinel)



The F8U-1 (F-8A) through F8U-2N (F-8D) used this pitot tube, which had an oval cross section sensor. This resulted in a flat profile when viewed from the side. This style of pitot was mounted just aft of the nose cone on the left fuselage side. The N suffix of F8U-2N stood for all-weather operation. (Nick)

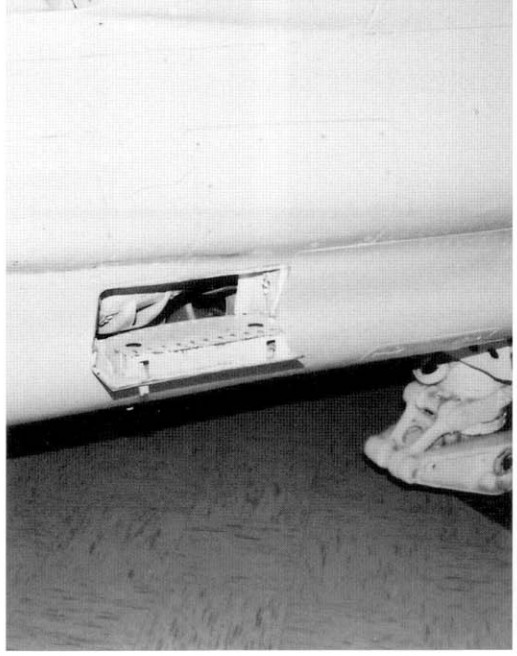
A yaw transducer vane was mounted atop the nose in front of the windshield on early Crusaders through the F8U-2 (F-8C). This mechanical vane was attached to a transducer, which generated a signal that powered an indicator on the pilot's instrument panel. (Author)



The more aerodynamic AIMS design pitot was used on F-8Es and some remanufactured variants. It was mounted aft of the refueling probe illuminating light just below the windshield. This style pitot was also an integral part of the yaw indicating system. (Dann)

The Angle of Attack (AoA) transducer vane was mounted on the right fuselage side just below the canopy sill on all F-8s. This transducer sent a signal to the indicator that gave the fuselage's relative angle to the airstream. The AoA transducer also controlled the approach indicator lights mounted on the pilot's display and the nose gear flipper door. The insignia of the French Navy's *Flotille* (Squadron) 12F is painted near the AoA transducer. (Lubin)

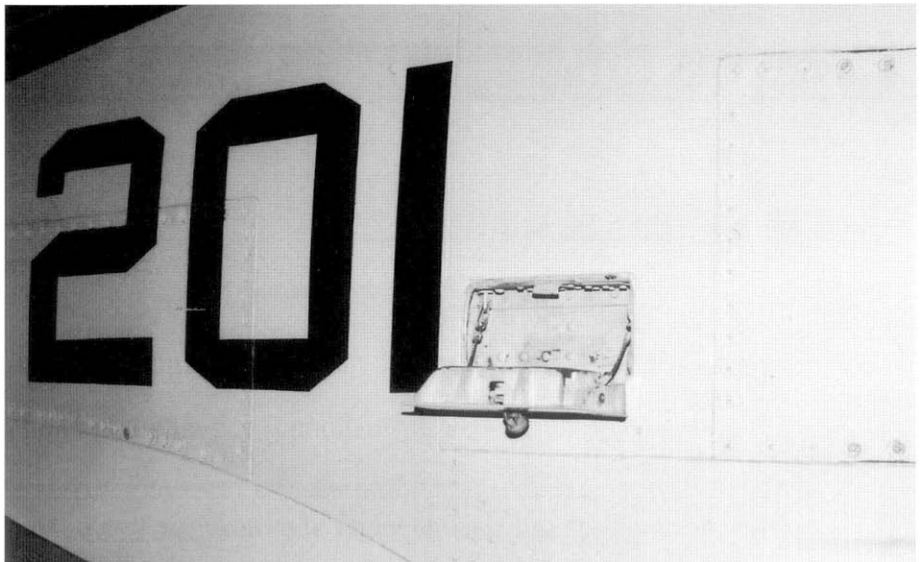
Integral steps located in the forward fuselage provide access to the cockpit. The lower step was attached using two curved aluminum tubes, which were manually extended to the full open position. The lower step had one spring loaded release mechanism that held this step in the closed position. (Author)



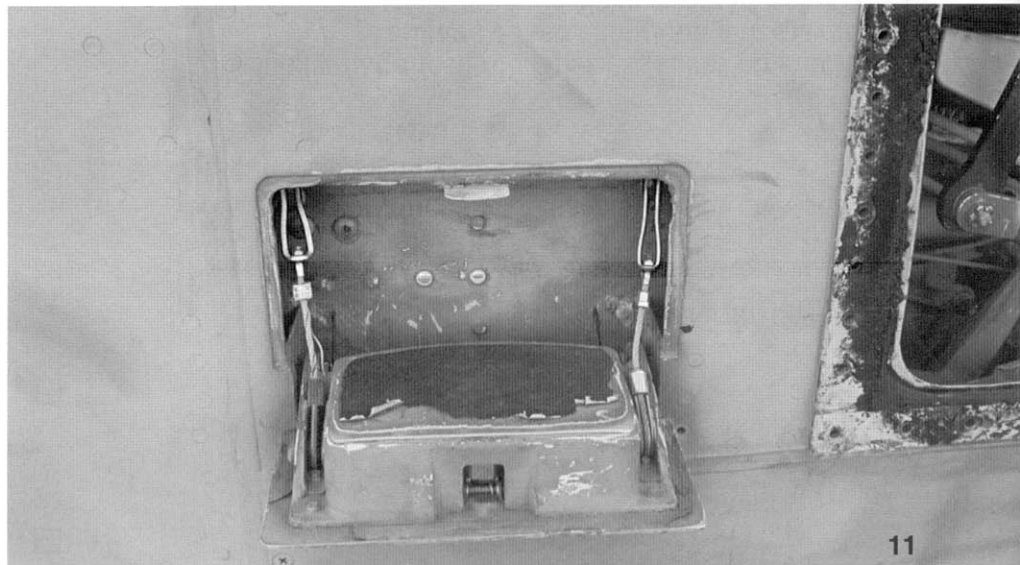
The center step was located just below the lower gun fairing. This step was secured in the closed position by two spring loaded release mechanisms located in its upper edge. (Nick)

The center step was equipped with flexible cables on each side. These cables provided support and prevented the step from overextending. No back panel was fitted to the center step receptacle, which exposed the air intake trunk frames located just inside this opening. (Weinel)

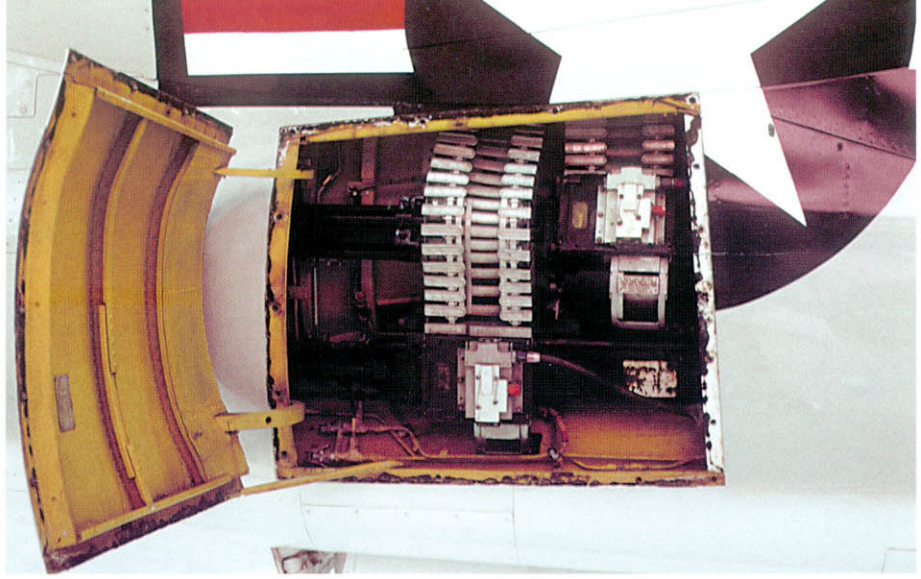
The upper step was located in line with the front windshield frame above and forward of the upper gun port fairing. This step was secured closed by one spring loaded retainer located in the step's upper center section. (Nick)



The upper step was also equipped with flexible cables; however, the step receptacle had a back panel to isolate the opening and prevent damage to the instrument wiring behind it. Non-slip coatings were applied on all steps. (Weinel)

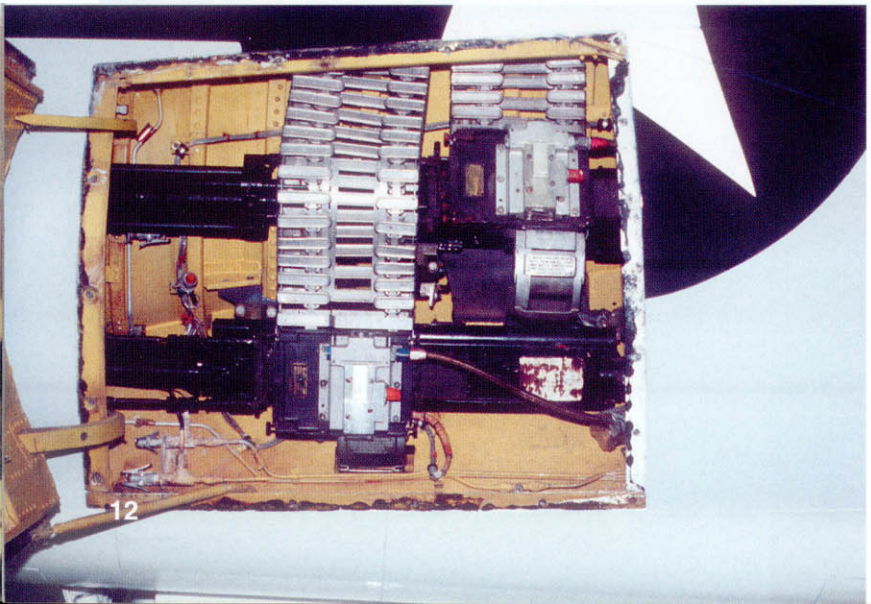


A VF-124 F8U-2NE (F-8E) (NL-421) prepares to launch on a training mission. This was the final production Crusader variant. It had the improved AN/APQ-94 fire control radar and a large diameter scanner in the nose that required a slightly larger nose cone. The AN/ASS-15 Infrared (IR) sensor was installed in the front of the windshield and additional fire control equipment was mounted in a 'hump' atop the wing center section. (Vought)

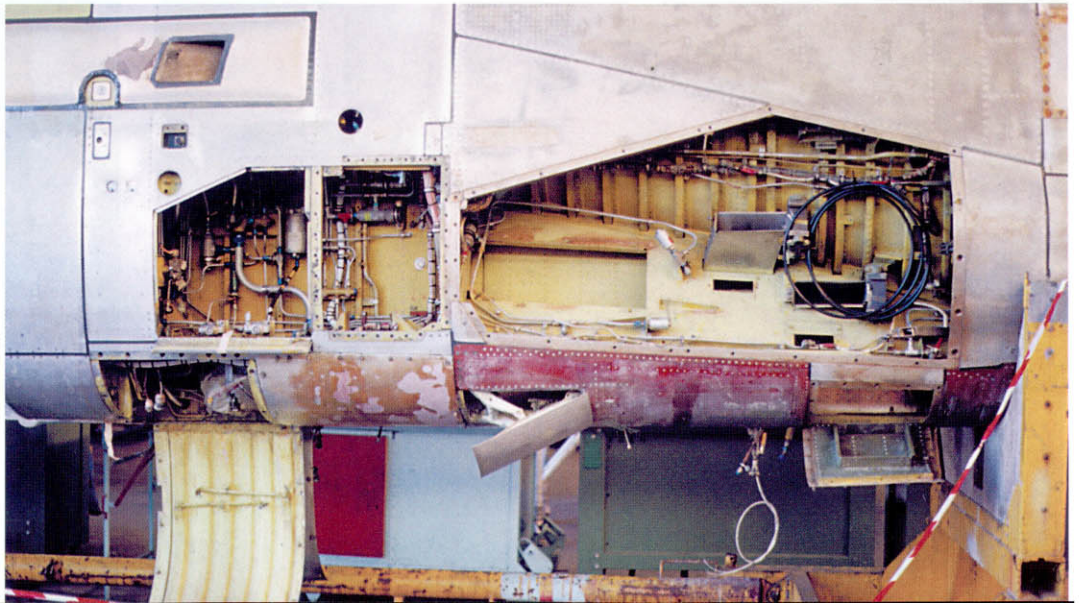


The Crusader was armed with four 20MM Colt-Browning Mk 12 cannon mounted in gun bays on each fuselage side. Access to each gun bay was provided through a forward hinged door and an aft removable panel. Loading and unloading of the guns was accomplished through the forward door. Each Mk 12 was supplied with 144 rounds. (Detail & Scale)

Each Mk 12 cannon has a Mk 7 Mod 2 pneumatic gun feed mechanism. This drew ammunition from the boxes, stripped it from the belt, and positioned it in the gun receiver for chambering. A removable 144-round ammunition box for each cannon was installed in the upper fuselage above the gun bay. (Detail & Scale)



Three major systems were mounted in the right fuselage mid-section compartments. The front compartment housed two cannon and associated fire control equipment. The middle compartment housed the pneumatic system's 1100-cubic inch (18,026 CM^3) spherical reservoir, while the aft compartment contained the Emergency Power Package (EPP). Both the reservoir and the EPP were removed from this Crusader for maintenance. (Weinel)



The F-8 was equipped with an EPP mounted in a compartment on the mid-fuselage's right side. This system provided both emergency electrical and hydraulic power. Its extension mechanism was powered by pneumatic pressure from the adjacent 1100-cubic inch pneumatic storage bottle. A fixed displacement hydraulic pump was mounted to the assembly's aft end. (Weinel)

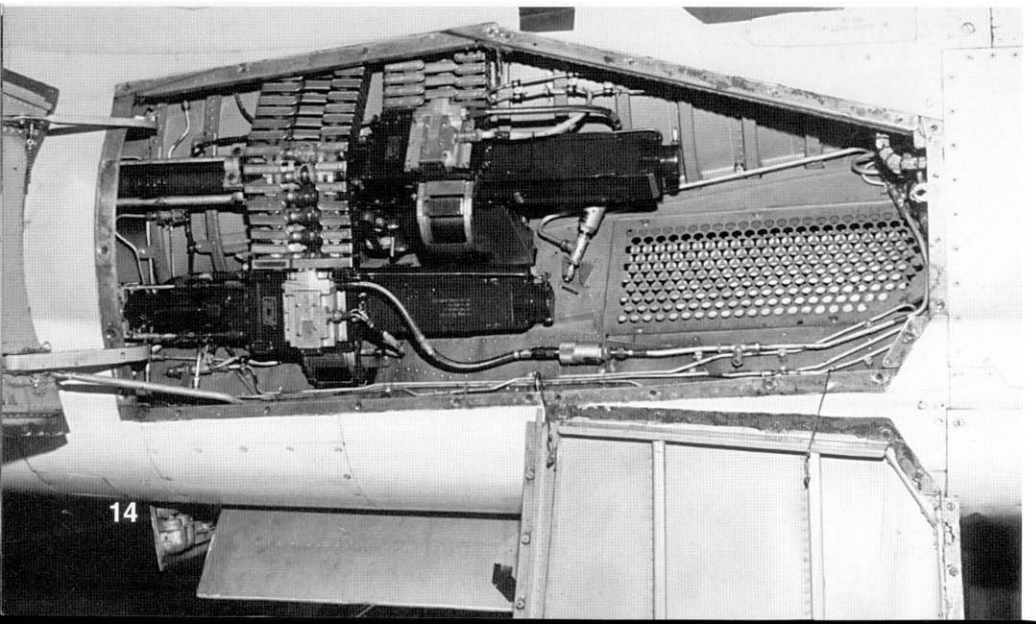
The RAT was mounted to a cast housing frame bolted to the bottom-hinged fuselage panel, which opened on RAT deployment. Once the RAT was deployed, it could not be retracted during flight. Mechanical locks held the extension cylinders in the extended position, which exposed the turbine face to the slipstream. (Weinel)

The EPP system's main component was the Marquardt Ram Air Turbine (RAT). The RAT consisted of a 12-inch (30.5 cm) diameter turbine, which drove an Alternating Current/Direct Current (AC/DC) generator integrally mounted aft of the turbine. (Weinel)

Early F-8s through the F8U-2 (F-8C) were equipped with a large equipment compartment atop the fuselage, immediately in front of the wing. Compartment access was via a large hatch that was hinged on the right edge where it connected to the fuselage. This was commonly referred to as the 'Buick Hood' because of its similarity to the 1941 to 1951 Buicks. (JEM)

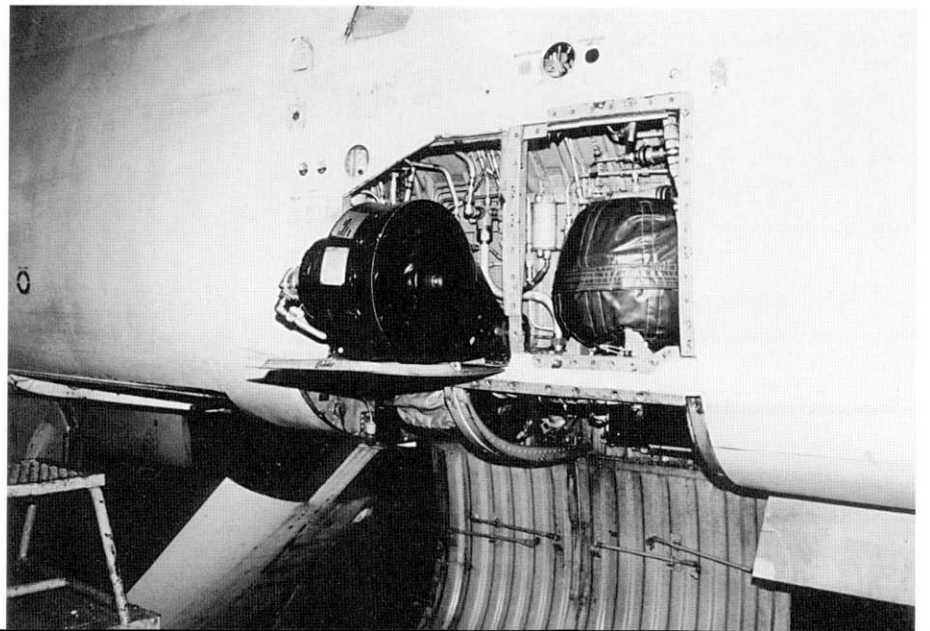
All Crusader fighters were armed with four 20MM Mk 12 cannon. Two were mounted on each lower forward fuselage side. The guns fired through streamlined gun blast ports mounted on the sides of the air intake ducts. The 101.5-pound (46 KG) Mk 12 had a muzzle velocity of approximately 3314 feet (1010 M) per second and a firing rate of 1000 rounds per minute. (Nick)

Ammunition was conveyed through a fixed chute that extended into the upper gun bay. A stainless steel feed chute connected the fixed chute to the gun feed mechanism. A chute for expended casings and links extended from the gun breech to the expended casing compartment in the lower fuselage. A removable panel allowed armorers to clean out this compartment after firing. (FN via Gall)



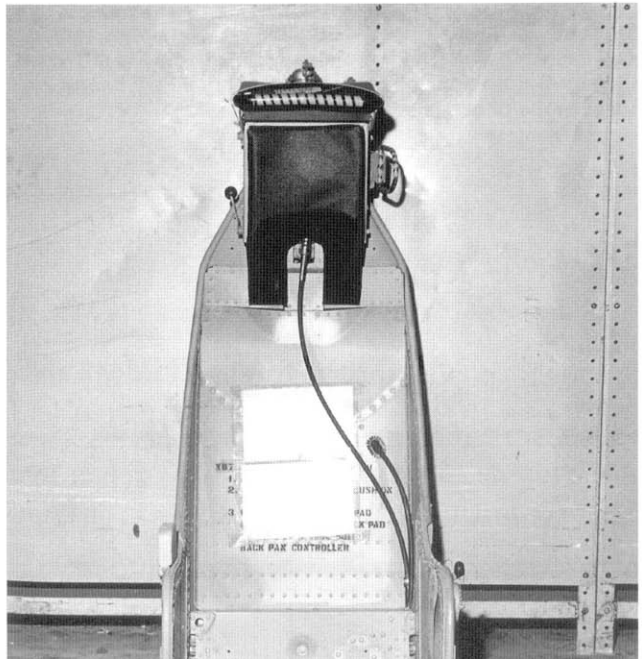
The replaceable gun blast fittings were made of cast stainless steel, which resisted the gunpowder's corrosive effects. They had an integral support rib to provide additional rigidity and direct airflow around the gun port. The liquid oxygen filler access hatch was located above the upper right gun port. (Nick)

The pneumatic system's 1100-cubic inch reservoir was located in the compartment just ahead of the Emergency Power Pack (EPP) compartment on the right mid-fuselage side. The main pneumatic reservoir was a spherical container that had an external insulation shroud. (Creignou via Gall)



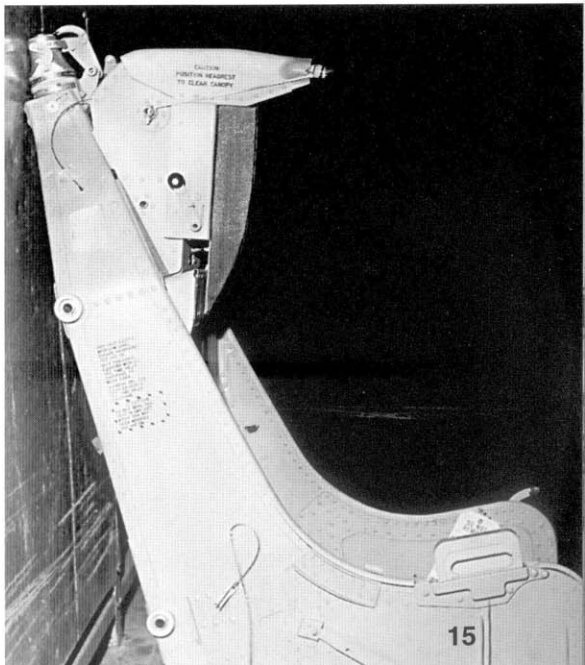
Two gun gas vent doors were located on each lower fuselage side. Explosive gases were vented from both the gun bay and the expended case and link compartment through these doors. The forward door opened into the air stream to admit purge ram air, which forced the gun gases out through the rear door. (Weinel)

The gun port doors were pneumatically actuated and were interlocked to open when the gun trigger was depressed. This rear panel door – like the front door – was made from stamped aluminum with formed reinforcement ribs. The cast aluminum actuator yoke was hinged at its aft end to a fuselage stringer. (Weinel)



(Left) F-8A, F-8B, and early F-8C Crusaders were equipped with this Vought-designed ejection seat that was based on the Douglas Escapac seat. This seat weighed only 30 pounds (13.6 KG) and was made of formed and riveted aluminum. The shoulder harness adjustment handle was mounted on the lower left side. The loop-shaped seat emergency arming handle was mounted on the headrest's left side. The front of the headrest was black vinyl and the face curtain handle was striped Yellow and Black. (Vought)

(Right) The Vought seat was painted the same Dark Gull Gray (FS36231) color as the general cockpit. The pilot's emergency harness release handle was mounted on the seat pan's right side. The headrest position adjustment lever was fitted to the headrest's right side. The seat required using a NB7 parachute equipped with a PK2 pararaft kit, a CV15-406808-3 seat cushion, and a CV15-406388 back pad. (Vought)



The F8U-2 (F-8C) and subsequent Crusaders replaced the Vought ejection seat with this Martin-Baker Mk-F5A. This was due to the Vought Seat's basic limit to high altitude ejections, while the F5A was used at most altitudes and airspeeds. Vought developed retrofit kits that allowed installation of the Mk-F5A into earlier Crusader variants. (Nick)

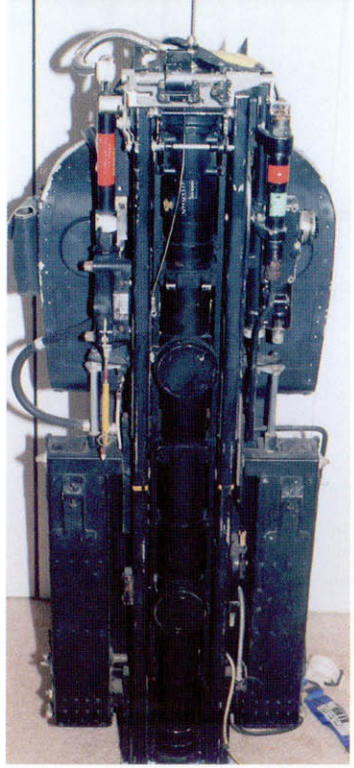
The Mk-F5A seat employed a soft 'horseshoe' parachute pack that was positioned behind the pilot's shoulders. A leg restraint system was provided to prevent leg injuries during ejection. An adjustable black pad located below the parachute pack provided the pilot with a proper fit. (Nick)

The Mk-F5A seat was readily identifiable by a Red decal located on the drogue parachute container's left side. This decal identified the seat model number and operational limits. A Yellow and Black canopy interrupter D-ring mounted in front of the decal was an emergency seat backup arming device. This was used when the canopy did not separate from the aircraft. The seat safety pin was contained within the Dark Gull Gray pocket on the parachute pack support frame. A wedge pad mounted above the parachute pack served as the pilot's headrest. (Nick)

The seat bucket accommodated the RSSK-6 soft cover survival kit. The upper compartment contained the emergency oxygen bottle. The bottom half contained a life raft, emergency locator beacon, and a survival equipment bag. A secondary firing handle was mounted on the seat front between the pilot's knees. (Nick)

(Left) Naval Air Systems Command (NAVAIR) Airframe change (AFC)-491 specified replacing the F-8's Mk-F5A ejection seat with this Martin-Baker Mk-F7 seat. This provided the Crusader with a true 'zero-zero' ejection capability. The Mk-F7 allowed the pilot to escape from a crippled aircraft at zero altitude and zero airspeed. (Nick)

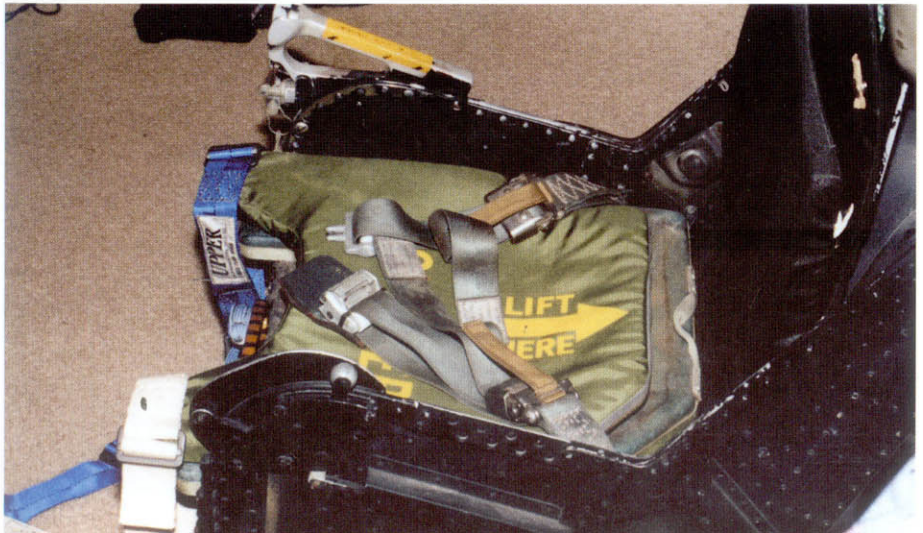
(Right) The Mk-F7 added a telescoping, long slide ejection gun, which replaced the Mk-F5A's catapult cylinder. Additionally, a rocket motor was mounted on the seat pan bottom. The ejection gun cylinder is mounted on the seat back, while discs on this cylinder are the ejection gun secondary charges. The small cylinder atop the seat rail's right side is the power retractor gun, while the drogue gun is the small cylinder at the rail's top left side. (Nick)



(Right) The Mk-F7 was equipped with a 'Skysail-E' parachute packed in a 'horseshoe' shaped hard-shell container positioned behind the pilot's shoulders. The seat safety pin storage packet was located on the parachute support frame's left side. This seat was also equipped with the Martin-Baker color-coded leg restraint garter: Blue for the right and White for the left. The Yellow and Black secondary firing handle is mounted on the seat pan's center. The Tan rectangular headrest pad is located below the face curtain hand loops. (Nick)

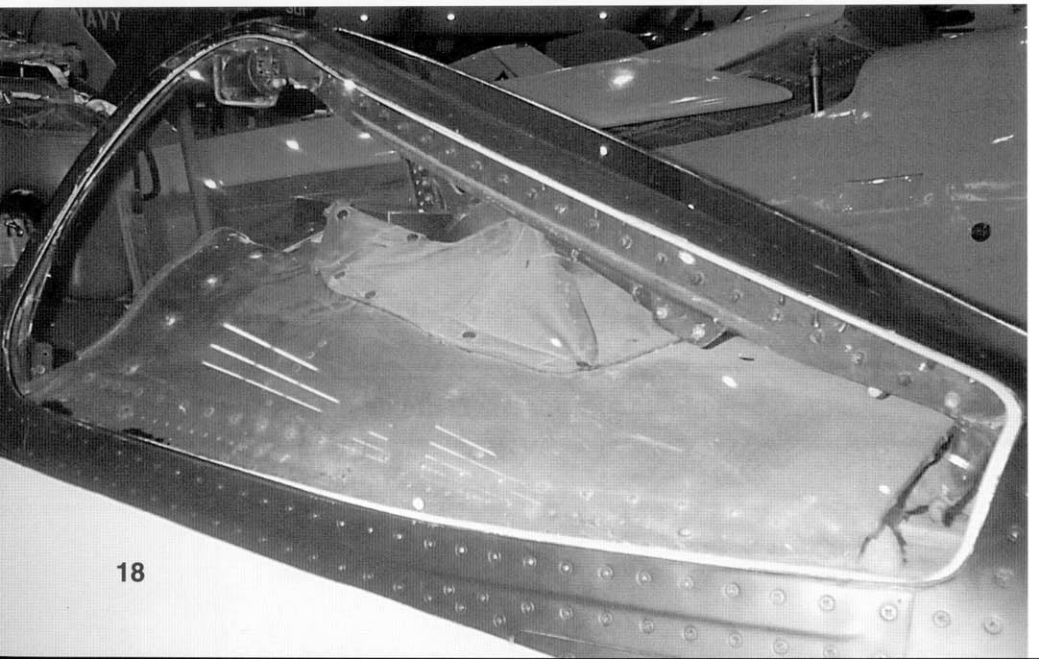
The Mk-F7's seat bucket contained the same RSSK-6 survival kit employed on the Mk-F5A seat. The upper half contained the emergency oxygen bottle, while the lower half held a life raft, radio transmitter, and survival equipment bag. The leg restraint release lever was located on the left seat frame's lower front edge. The shoulder harness lock lever was mounted on the top edge of the left side seat frame above the leg restraint lever. (Nick)

The Mk-F7's upper housing contains the stabilizer drogue parachutes and served as a face curtain mounting platform. The Yellow and Black canopy interrupter release D-ring was located on the upper housing's left side. Breaker points mounted to each side of the housing's head box insured proper canopy penetration. The Silver Mk-F7 seat Identification (ID) tag was also located on the head box's left side; the earlier Mk-F5A used a Red ID tag. (Nick)



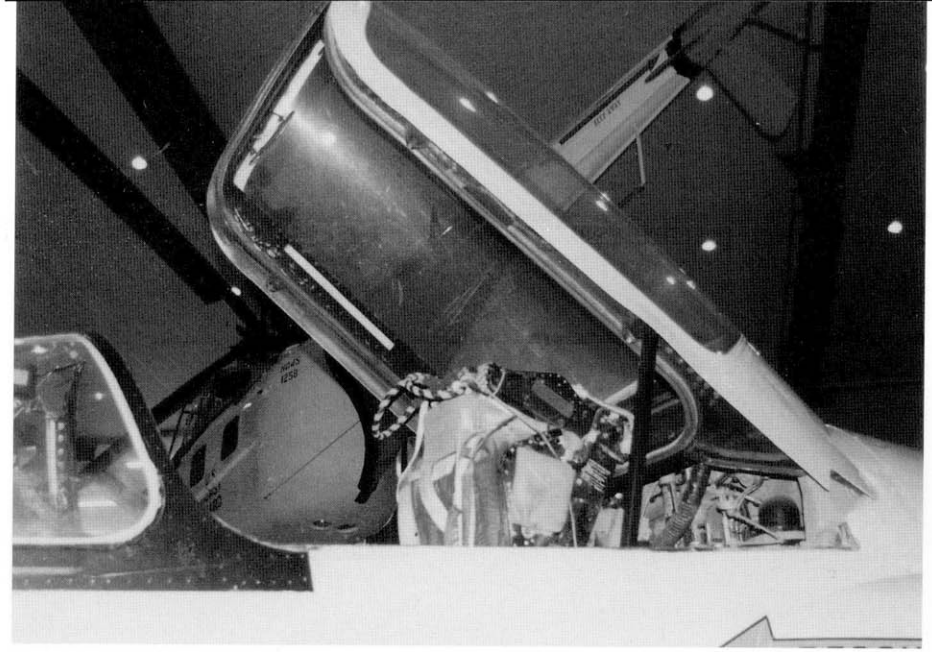
Pivot arms at the canopy frame's aft end attached the F-8's one-piece clamshell-type canopy to the fuselage. This canopy was manually operated and locked. A counterbalance strut aided the pilot in raising and lowering the canopy without the aid of power devices. (Weinel)

Forward visibility was provided through a windshield assembly. This consisted of an elliptical centerpiece of 1-inch (25MM) thick bulletproof glass and two flanking plexiglass quarterlights. These quarterlights extended aft to align with the forward canopy frame. (Nick)



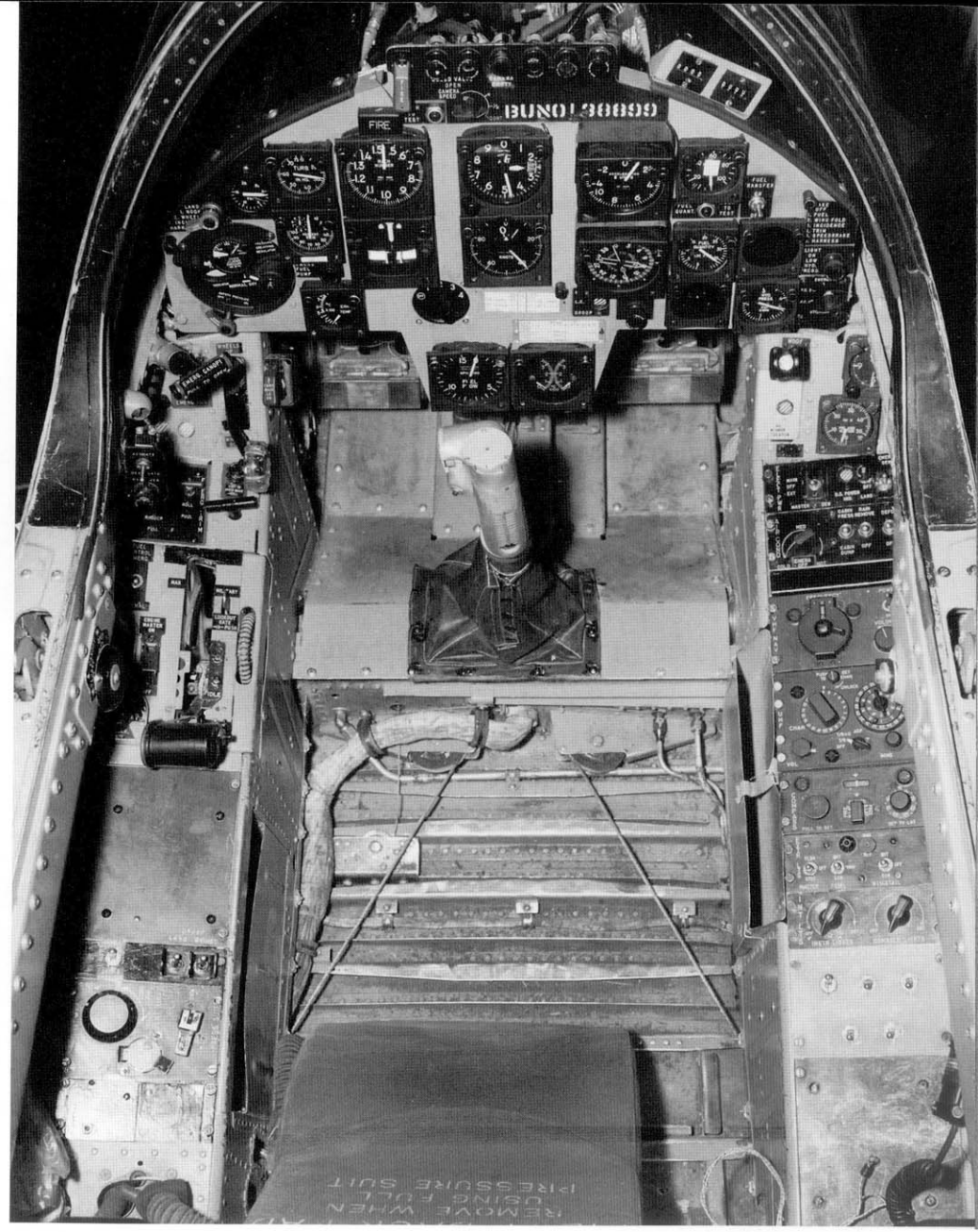
The area behind the pilot's seat and under the aft canopy bulkhead contained a cartridge-operated emergency canopy actuator. The corrugated hose in the center provided temperature-controlled air for the canopy defogging and air conditioning ducts. The 1.3-gallon (5 L) spherical oxygen storage bottle was located on the aft edge of this shelf. This bottle was painted Light Green (FS14187). (Nick)

The windshield's center panel was made of 1-inch thick bulletproof glass. This panel was optically coated to reduce glare and improve gun sight Head Up Display (HUD) visibility. The HUD was located above the instrument panel shroud, directly below the center glass panel. (Nick)



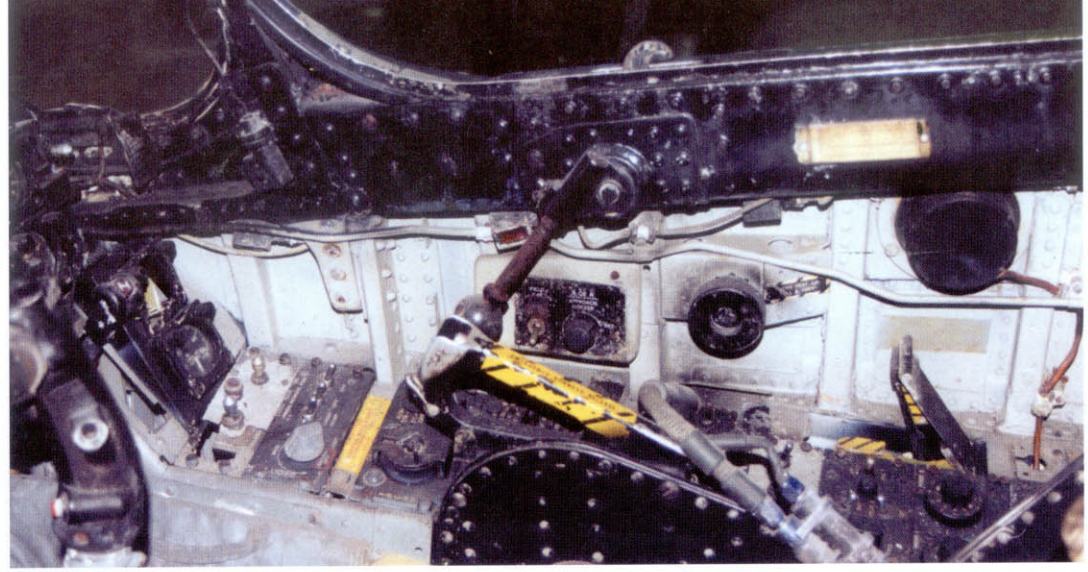
The single-piece plexiglass canopy was built into a cast magnesium frame. This canopy was locked in the closed position by four rotating hook latches mounted in the cockpit sill. A striker and diaphragm arrangement achieved the pressurized canopy seat. The seal diaphragm ran the periphery of the inner canopy frame edge and rested on a raised rib fixed to the fuselage frame. (Dann)

The canopy aft bulkhead was built from formed aluminum with reinforcing ribs for structural rigidity. This Flat Black (FS37038) bulkhead was devoid of any wiring or attachments except for an aircraft data plate and an ejection seat information panel. (Nick)



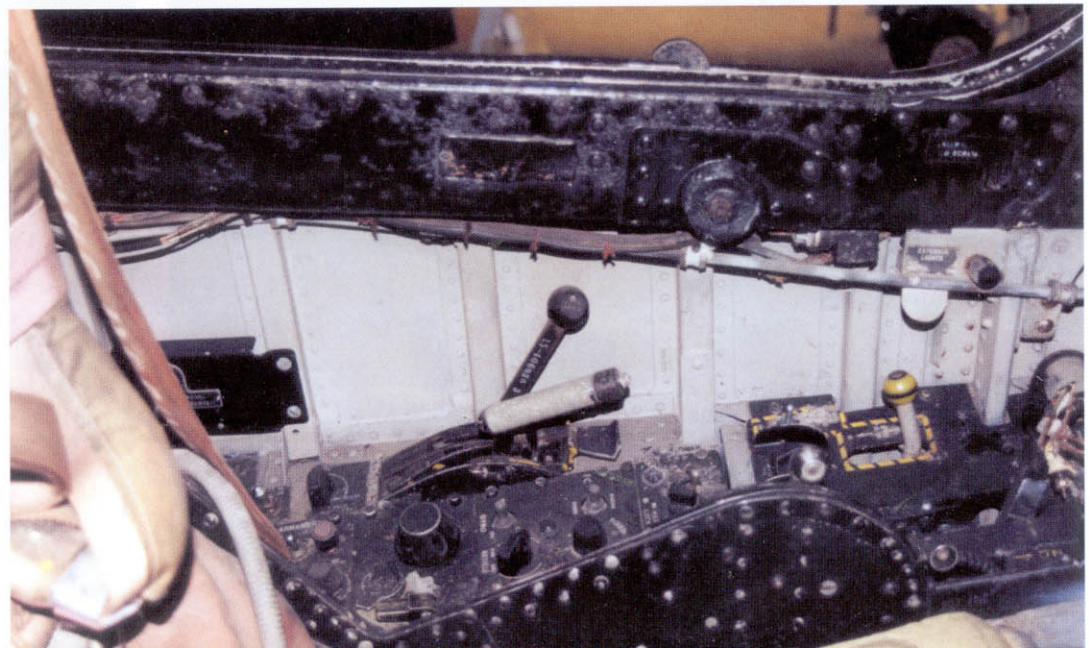
The first XF8U-1 prototype (BuNo 138899) cockpit layout established the general pattern for all Crusaders. The pilot's main instrument panel contained all the primary flight instruments, while the right console contained the electronics and communication instruments. The left console held the throttle, fuel control, and hydraulic controls. The prototype had a simple straight control stick that included yaw and roll trim adjustment switches. (Vought)

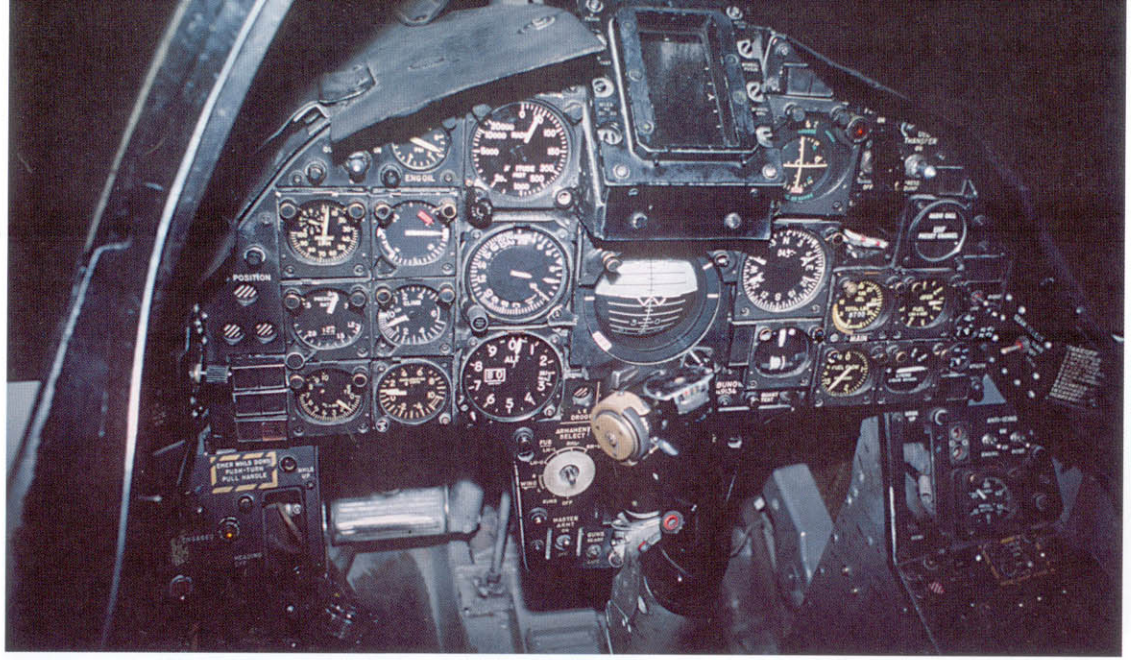
The F8U-1 (F-8A) cockpit followed the XF8U-1's general arrangement. The gun sight reflector was mounted directly in front of the pilot on the windshield's top edge. The Angle of Attack (AoA) approach indexer is mounted to the sight's left, while the auxiliary compass is located to its right. A rectangular armament panel is mounted atop the instrument panel, while primary flight instruments are installed on the instrument panel. (Detail & Scale)



The F8U-1's right console contained (fore to aft): the arresting hook control lever, cabin pressure altitude indicator, power distribution panel, and Identification Friend or Foe (IFF) controls. The rectangular approach indexer control panel is mounted to the sidewall. The canopy manual locking lever is located on the canopy sill. Yellow and Black stripes mark the wing fold lever mounted to the panel's aft end. (Dann)

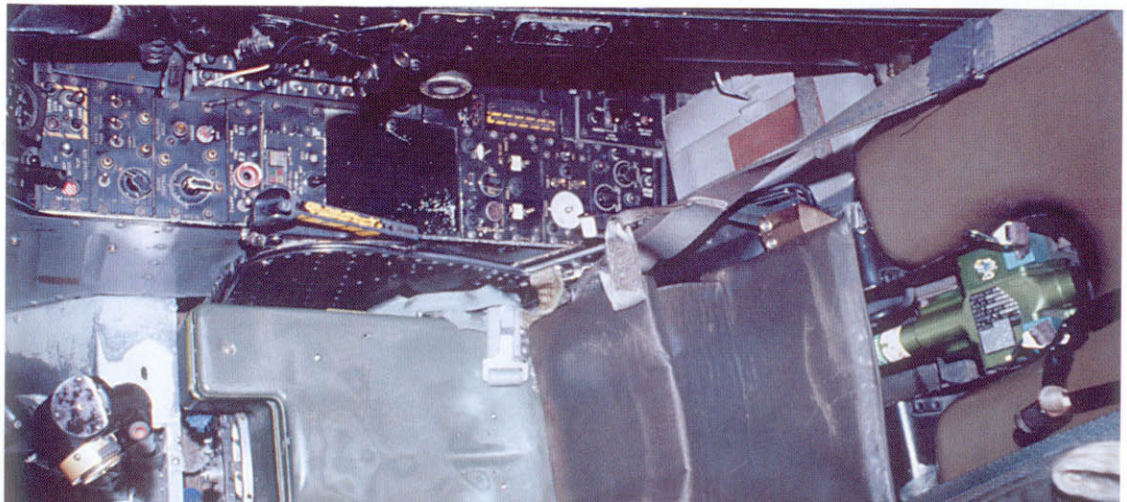
The F8U-1's left console contained (fore to aft): the throttle quadrant, the Yellow knobbed emergency brake handle lever, the fire control master panel, trim controls, radar control panel, oxygen distribution control, speed brake, and cruise droop control switches. A ball is mounted atop the wing lock down handle. The wing incidence control lever is the round handle in front of the lock down lever. (Dann)





The first F-8E (BuNo 149134) has the preliminary cockpit and instrument panel arrangement for this variant. The rectangular AN/APQ-94 range azimuth radar indicator at the panel's top center was repositioned on all subsequent F-8Es to be vertical and inline with the main instrument panel. This new position reduced glare, eliminated interference with the Head Up Display (HUD), and allowed for mounting the day mission hood to the screen. (Detail & Scale)

The F-8E's right console followed the same principles as on earlier Crusaders. This console contains (fore to aft): the arresting hook handle, cabin altimeter, electrical distribution control, air conditioning control, autopilot panel, lights, and IFF control panel. Two blank panels housed the Tactical Air Navigation (TACAN) and Ultra High Frequency (UHF) radio controls. The wing fold control is under the Yellow and Black panel at the upper aft end. The chart board light was suspended from the canopy sill just behind the canopy locking handle. (Detail & Scale)



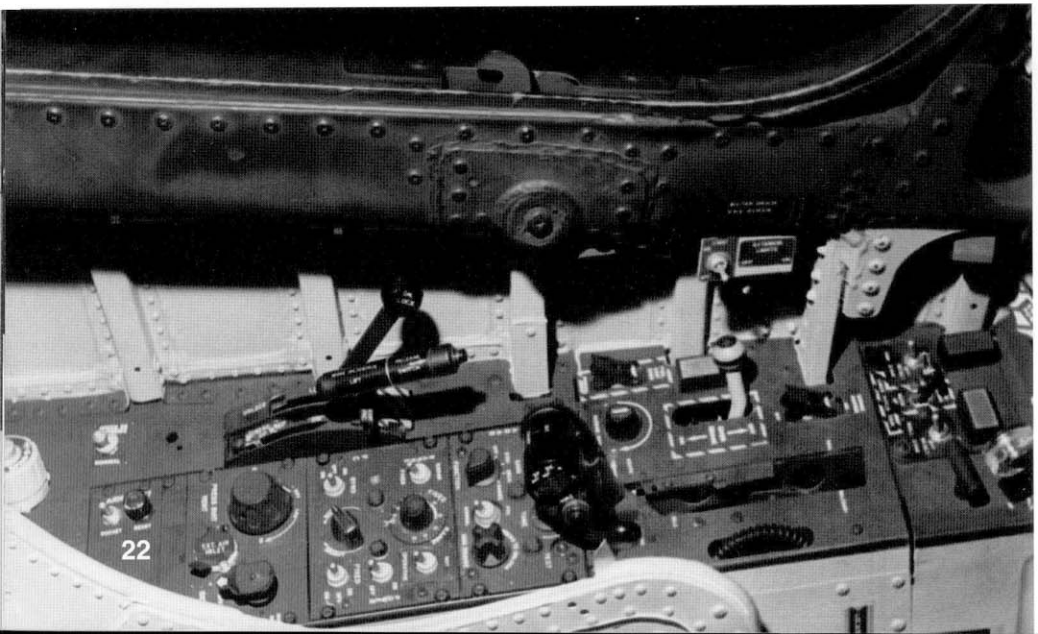
Control columns fitted to F-8Ds, F-8Es, and F-8Js each had a dual grip configuration. The aft main grip was for flight control and contained trim switches, gun trigger, stores release button, and nose steering switch. The forward grip was for radar control. The cockpit was painted Dark Gull Gray (FS36231), with a Black instrument panel and console faces. (Detail & Scale)

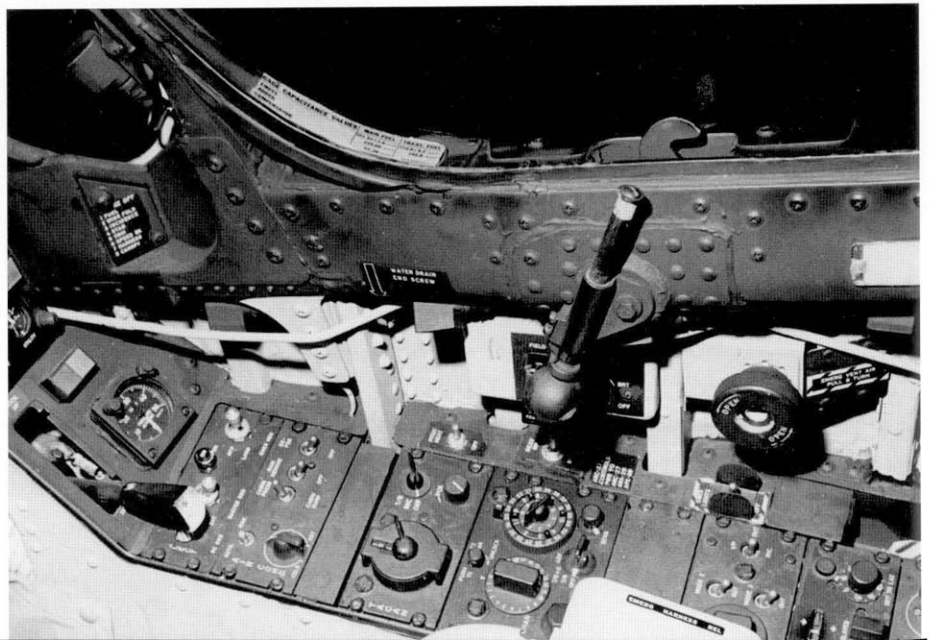
A single grip control stick was installed on earlier F-8U-1 (F-8A) through F8U-2 (F-8C) aircraft. The nose gear steering switch was located on the grip's bottom facing forward. The button in the middle left side of the grip was the stores release switch, while the gun trigger was on the grip's front. The landing gear position lever is located to the left of the rudder pedals. (Vought)

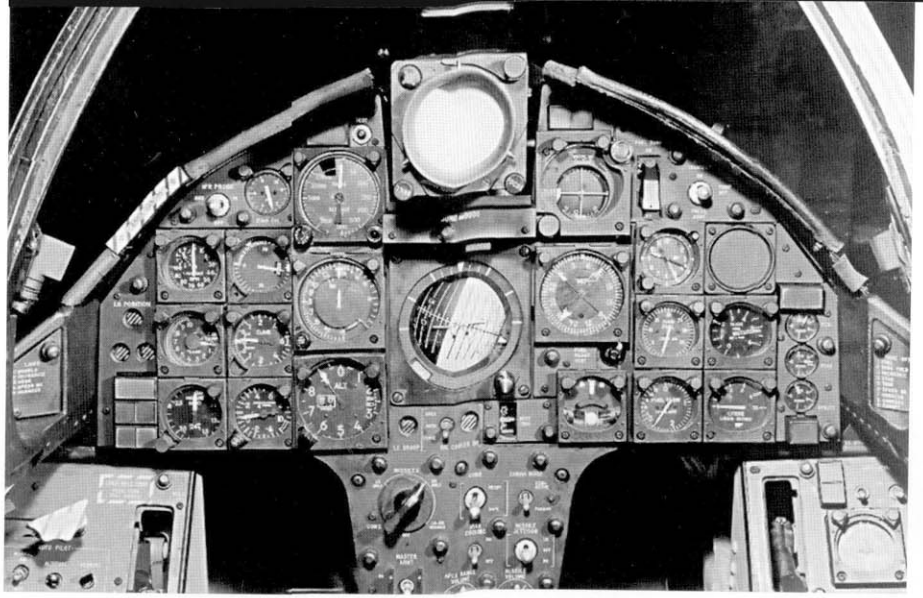
The roll trim control dial switch is mounted on the handgrip's center top section. The dial switch for pitch control was placed on the left upper grip section. The right console's front section contained the tail hook position control lever and the cabin pressure altimeter. (Vought)

The throttle control lever was mounted on the left cockpit console of this F8U-2 (F-8B). A throttle lever friction adjustment wheel is located immediately left of the seat. Early F-8s did not have cockpit insulation blankets on the cockpit sidewalls, which left the structural frame ribbing exposed. (Vought)

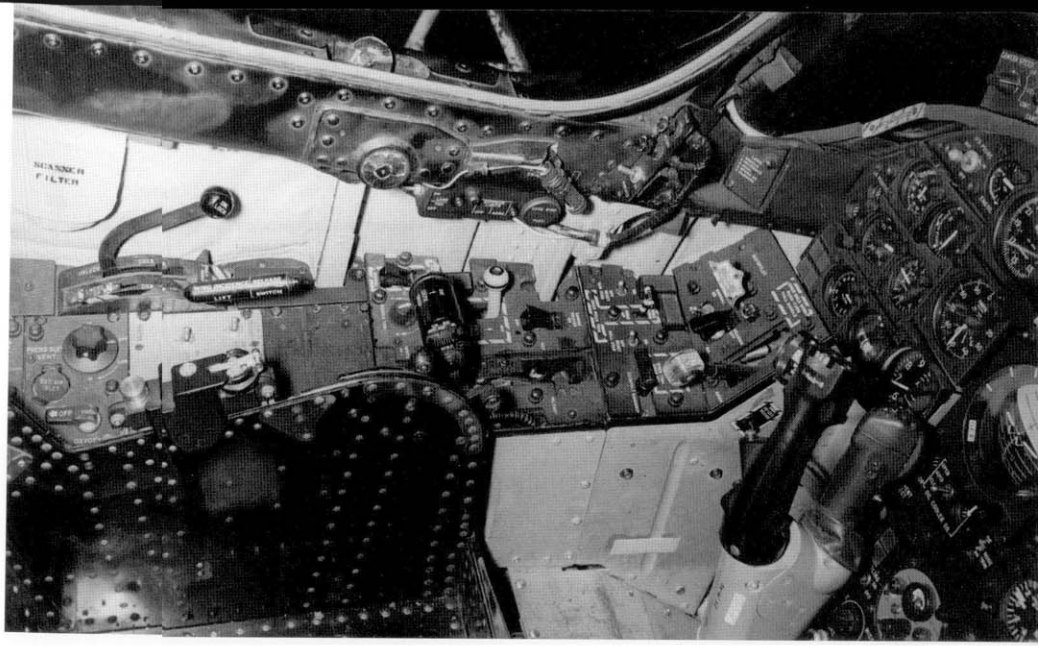
The manual interior canopy release lever was located on the right canopy sill's front area. This lever was moved forward to lock the canopy closed. Detents (locks) allowed the handle to be stowed while in flight. The cockpit emergency ventilation control knob is mounted behind the canopy control lever. This knob allowed the pilot to control the amount of ram airflow into the cockpit. (Vought)





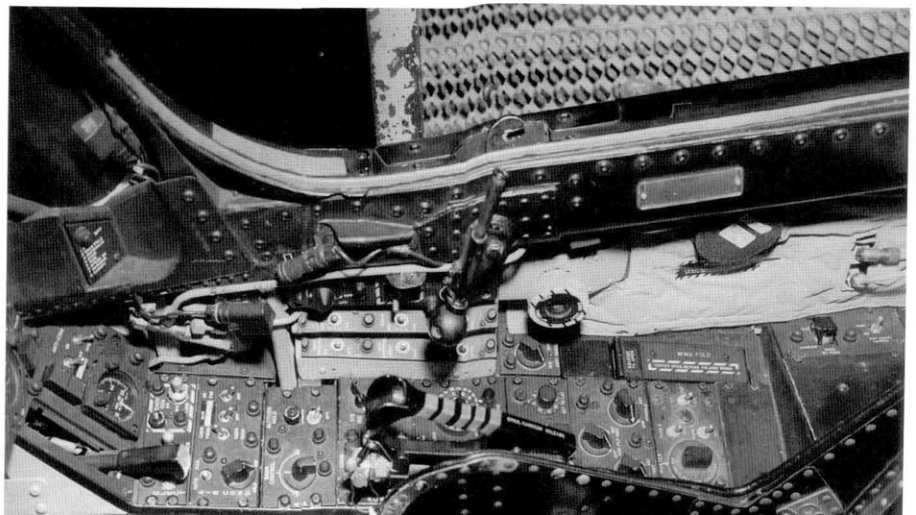


Primary flight instruments were mounted on the main instrument panel of the second F8U-2N (F-8D) (BuNo 147306). The top center section housed the 3-inch (7.6 cm) diameter AN/APQ-83 radarscope, while the attitude indicator was mounted directly below this item. The oil cooler/duct bypass door control panel was located below the attitude indicator. The emergency canopy jettison handle was mounted on the instrument panel glare shield hood's left side. (Vought)

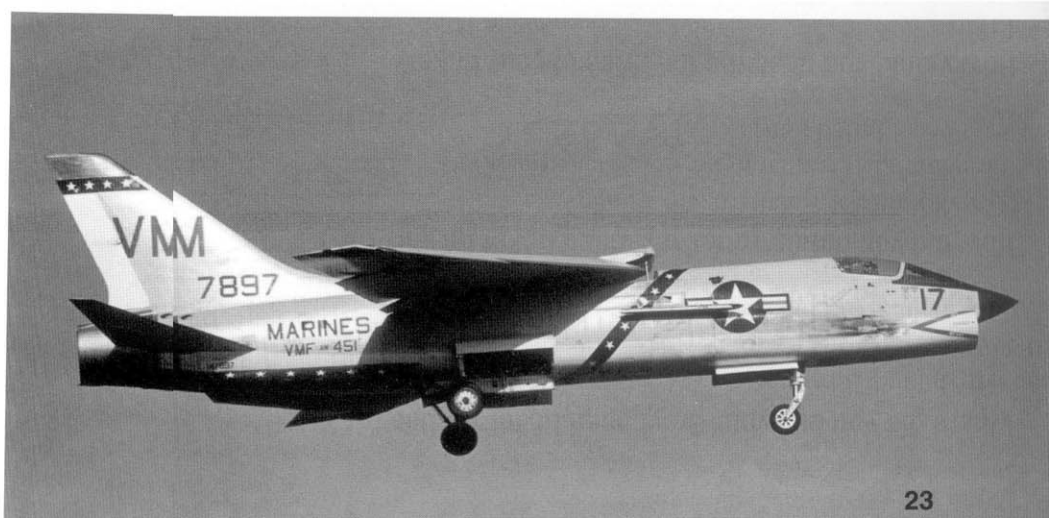


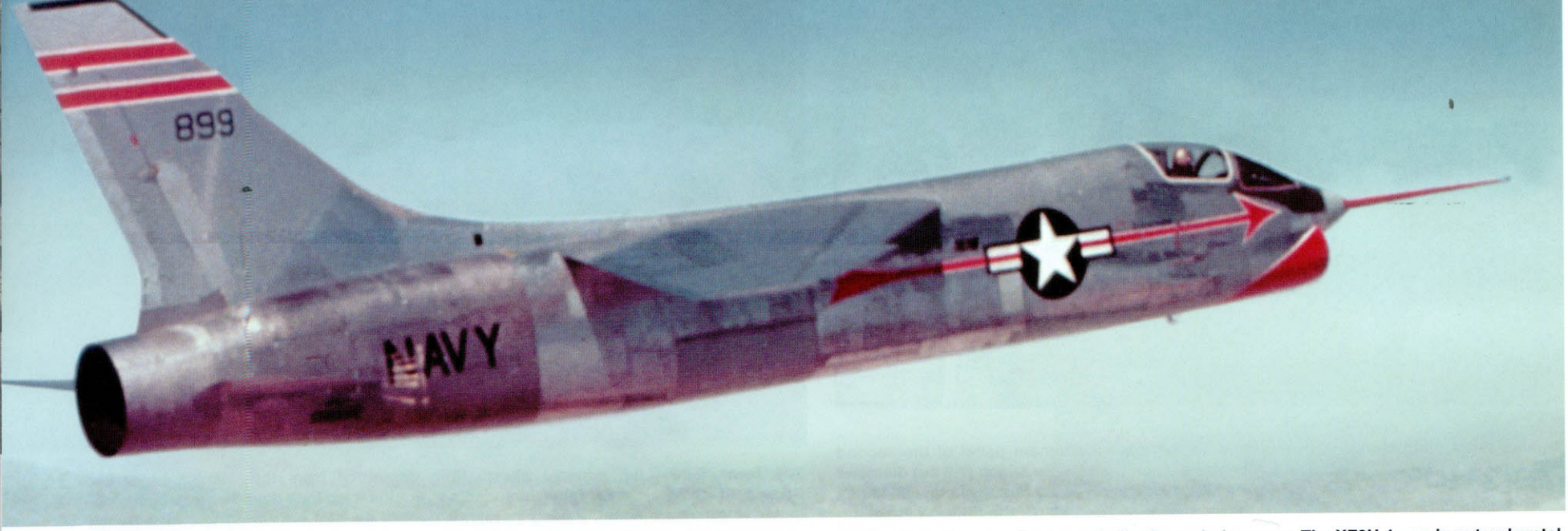
The same F-8D's left console shows little difference from the consoles of earlier Crusaders. The main differences included a reshaped wing lock down handle, which eliminated interference with the wing incidence control handle. A gyro caging switch panel, cabin spotlight, and the approach power compensator panel in front of the parking brake handle were also added in addition to the dual grip control column. (Vought)

The second F-8D's right console also shows subtle differences from those on earlier Crusaders. Main differences included adding the autopilot control panel, relocated TACAN controls, adding cockpit spotlights, and relocating the interior and exterior light control panels just below the canopy locking handle. The F-8D and later variants were equipped with cockpit insulation panels on the sidewalls, which covered the aft portion of the sidewall. (Vought)



An F-8D (VM-17/BuNo 147897) of Marine All-Weather Fighter Squadron Four Fifty One (VMF[AW]-451)) approaches NAF Atsugi, Japan on 12 August 1973. Major differences of this variant from earlier Crusaders included the more powerful 18,000-pound thrust J57-P-20 engine and AN/APQ-83 radar. The AN/ASS-15 IR scanner was installed on late production F-8Ds. Additional improvements included the approach power compensator and autopilot system. (Matsuzaki)

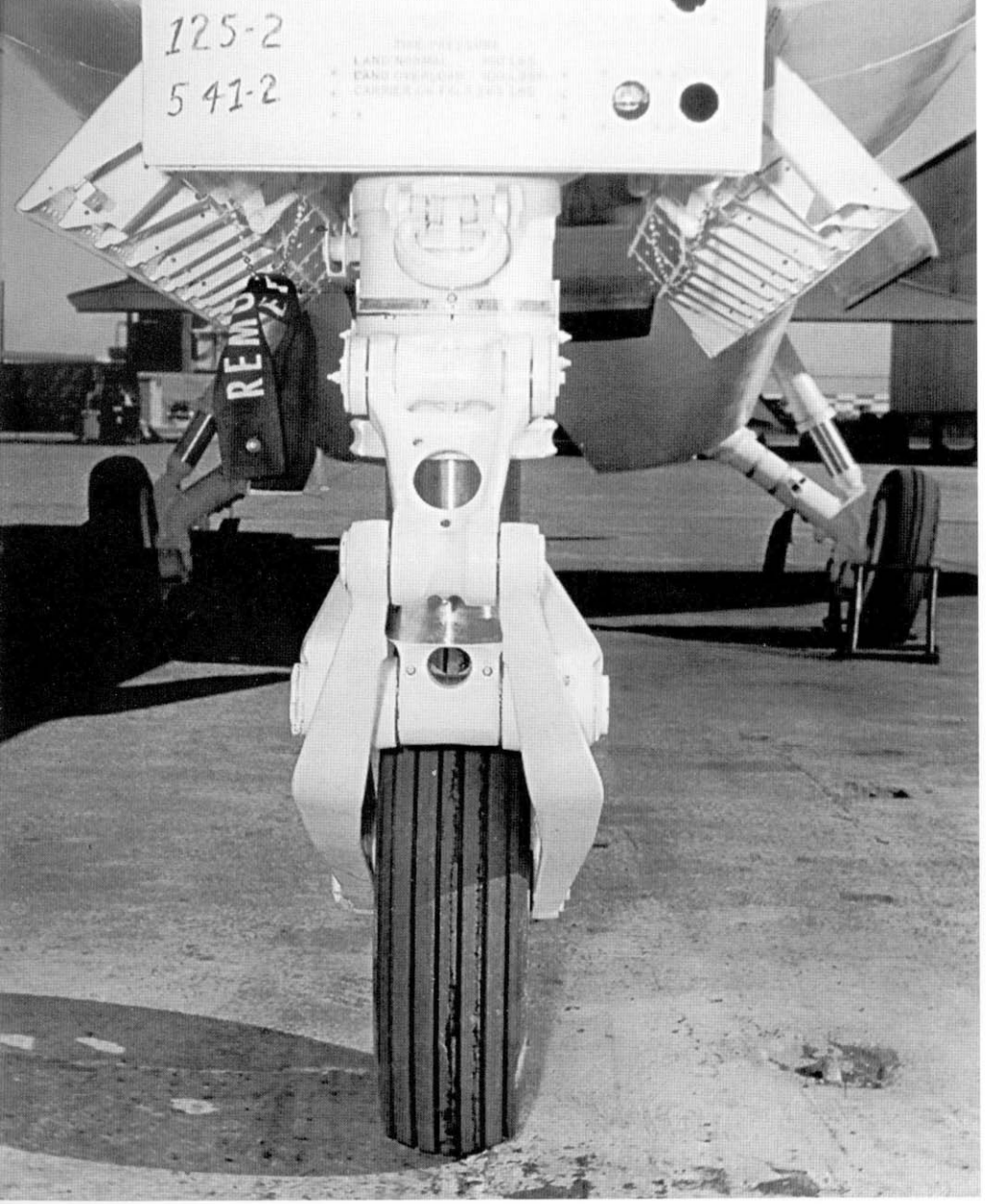




The first XF8U-1 Crusader (BuNo 138899) performs its maiden flight from Edwards Air Force Base (AFB), California on 25 March 1955. Vought test pilot John W. Konrad was at the controls when it went supersonic in level flight during this 52-minute mission. It marked the first time an aircraft attained supersonic speed during its maiden flight. This set the first of many milestones in the Crusader's career. The XF8U-1 was in natural metal, with Insignia Red (FS11136) and Insignia White (FS17875) trim. A test instrumentation boom was mounted on the nose. (Vought)

A VMF(AW)-112 'Cowboys' F-8H (MA-00/BuNo 148710) sits on the flight line of NAS Dallas, Texas in May of 1975. This Marine Reserve unit flew the F-8H from Dallas between 1973 and 1977, when McDonnell Douglas F-4N Phantom IIs replaced the Crusaders. A Dark Blue Texas map is painted on the mid-fuselage under the wing. This aircraft was one of 89 F-8Ds that Vought remanufactured to F-8H standard during the late 1960s. (Anderson)

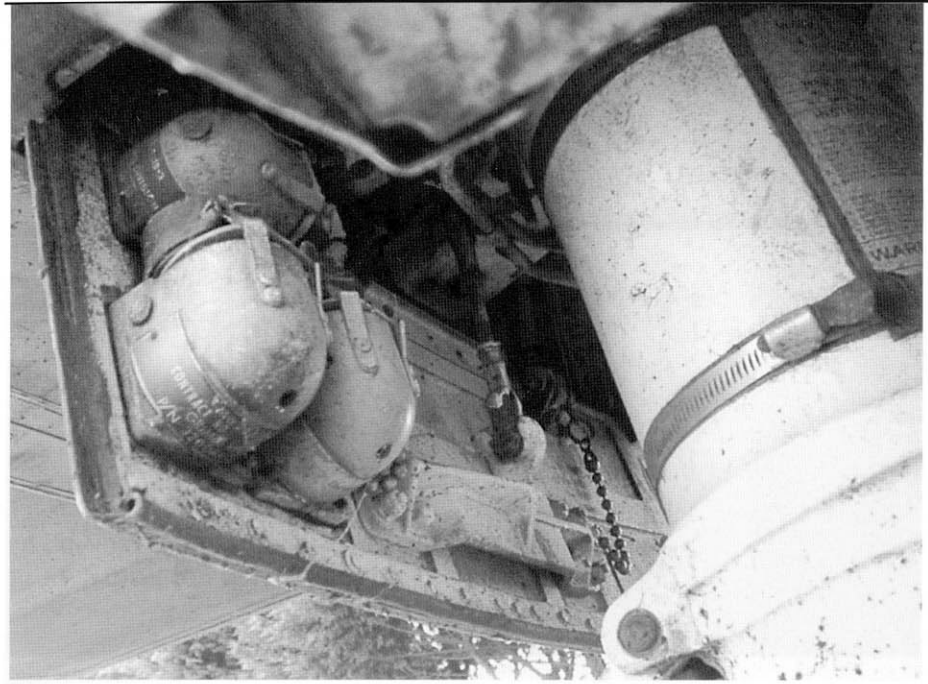
A VF-201 'Red Riders' F-8H (AF-104/BuNo 147925) is parked between missions at NAS Dallas in May of 1975. This variant featured the more powerful J57-P-20 engine, which resulted in the addition of afterburner cooling scoops on the aft fuselage. Wing pylons were not fitted on this Crusader, but provision for them was incorporated during rebuilding of these aircraft. This Naval Reserve squadron flew this Crusader variant between December of 1970 and February of 1976. VF-201 previously flew the F-8K (remanufactured F-8C) from July of 1970. The AF tailcode indicated Reserve Carrier Air Wing Twenty (CVWR-20), the Atlantic Fleet's Reserve Carrier Air Wing. (USMC via Alexander)



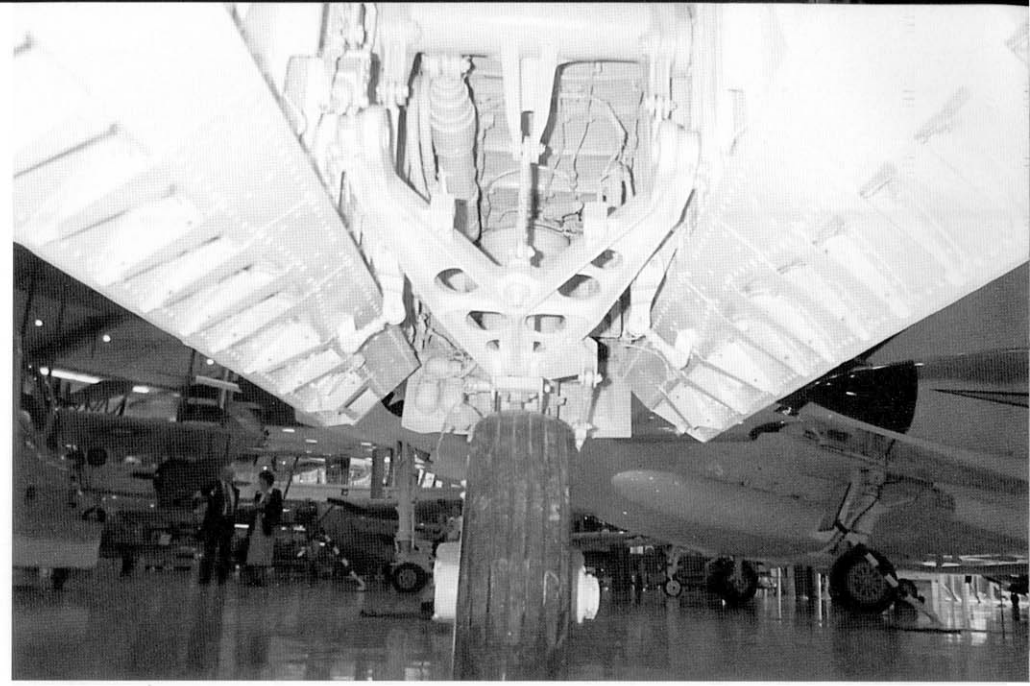
The three main nose landing gear components on F-8 fighters were a front flipper door and right and left side doors. The front flipper door contained the approach indicator lights in its left section (right in this photo). The upper indicator light was Red, the lower outer indicator was Green, and the inner indicator was Yellow. (Vought)

F8U-1 (F-8A) to F8U-2 (F-8C) and F8U-1P (RF-8A) Crusaders employed a spoked-style nose wheel. The nose gear was capable of full 360° caster when the nose gear steering system was not engaged. The early style nose gear had main support yoke arms that terminated at the front torque linkage. The 16-ply tubeless nose gear tire was 22 inches (559MM) in diameter by 5.5 inches (140MM) wide. (Vought)

The second style nose wheel was introduced on the F8U-2N (F-8D) variant. It was made of a solid aluminum casting that replaced the earlier spoked design. This solid style wheel replaced the spoked wheel on earlier Crusaders as they were processed through routine maintenance. A mooring tie down loop was located at the main gear shock strut's front section. (Rouch)

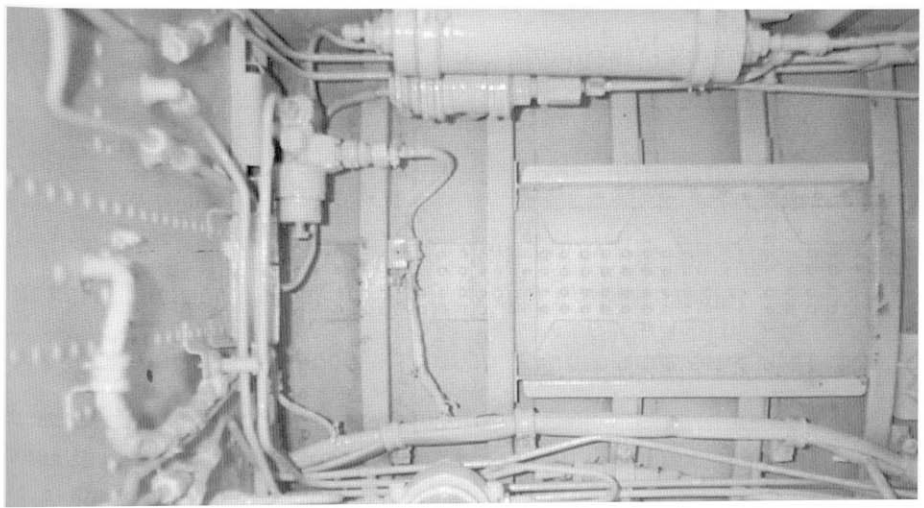


The nose flipper door was a single piece of aluminum, with a reinforcing frame riveted to the main plate. Three approach indicator lights were housed in watertight sockets fastened to the main door panel. The door was connected to the nose gear torque tube by a connecting rod at the door's center. This door closed during landing gear retraction. A rubber lip seal was installed on the door's lower edge. (Lubin)

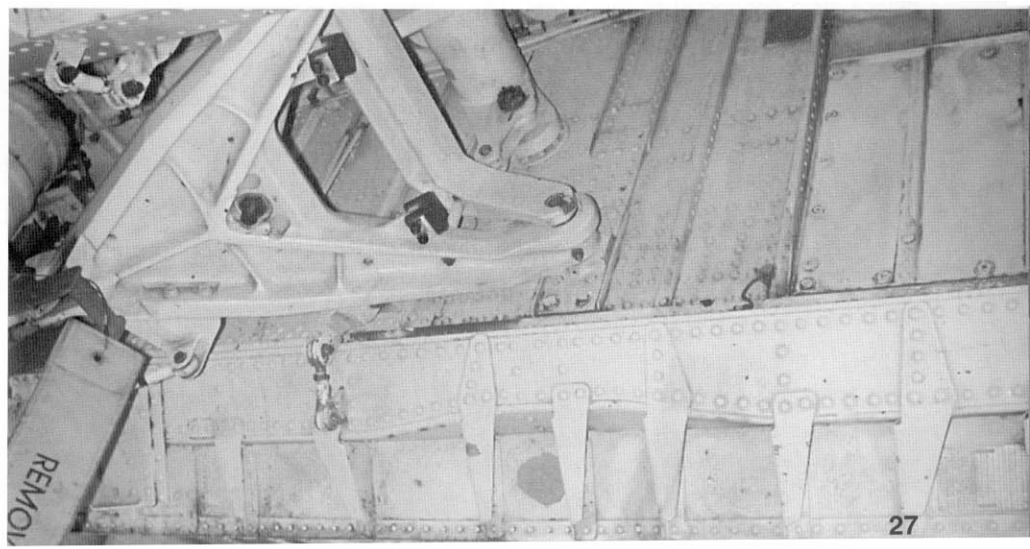


The main nose gear torque tube is mounted in the upper portion of the nose gear well. A nose gear actuating cylinder is located on the well's upper left section. The nose gear retracting link connected the torque tube to the 'Y' frame drag link, while a linkage rod connected the drag link to the nose gear flipper door. (Nick)

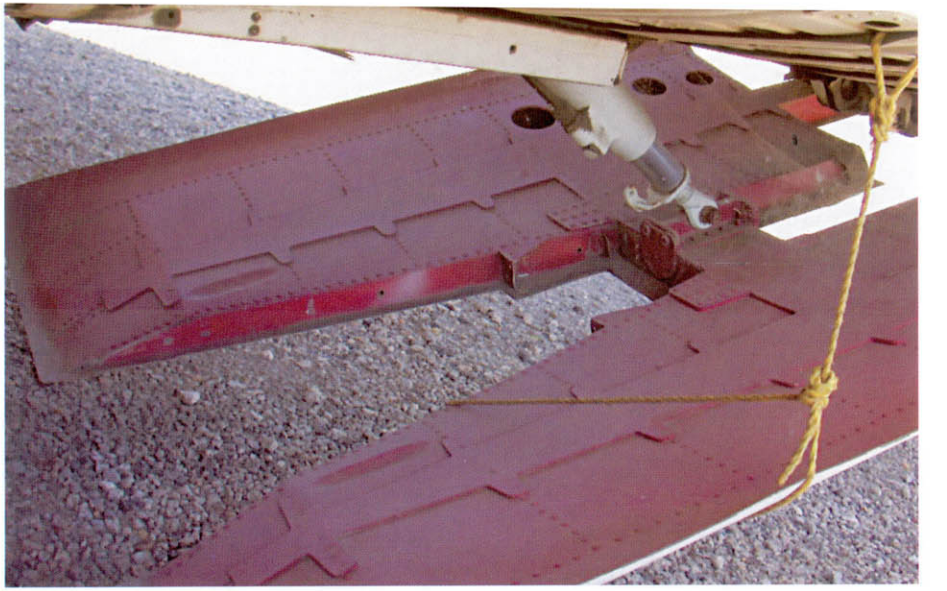
The nose gear retracted up and aft into the nose gear well. A bumper pad was mounted on the well's roof, which was part of the engine intake trunking. This pad centered the tire when it was retracted. The nose gear steering system check valve and damping accumulator were mounted on the right wall. A steering system relief valve was mounted on the left wall and the nose gear shuttle valve was mounted on the aft bulkhead's upper right corner. (Nick)



The torque tube was mounted at both ends to the nose gear well's forward section. The 'Y' frame drag link is located immediately below the torque tube, while small bell cranks below the 'Y' frame are mounted on the left and right gear doors. These cranks were connected to long connecting rods that were mounted to the torque tube. (Weinel)



Maintenance technicians test the Emergency Power Pack (EPP) on this F-8H (NW-601/BuNo 147049) of Anti-submarine Fighter Squadron Eighty Six (VSF-86) 'Gators' prior to a mission. This Squadron provided fighter protection for anti-submarine aircraft carriers. The F-8H was a remanufactured F-8D, which featured an upgraded wing with a higher load design. Other changes included improved landing gears and arresting hook, wing mounted external stores capability, a larger AN/APX-94 radar scope, and a pneumatic gun charging system. (JEM)



The speed brake was an integral part of the rocket pack installation on F8U-1 (F-8A) through F8U-2 (F-8C) aircraft. A hydraulic cylinder opened this brake, which retracted into the rocket pack's bottom. This speed brake was extended up to 59°. The speed brake actuation circuit was interlocked with the main landing gear to prevent opening during ground operation. (Rouch)

The rocket pack's bottom was reinforced with stringers to provide stiffness to the speed brake support header. The speed brake was hinged at the front by two arms on the center of each main brake section. These hinges were connected to the rocket pack's front structural bulkhead. (Rouch)

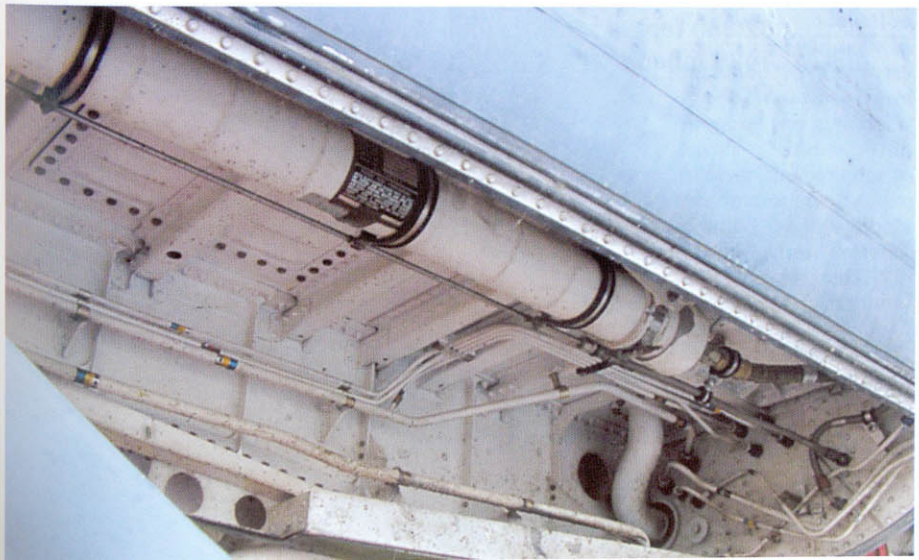
The rocket pack was eliminated and the speed brake was reconfigured on the F8U-2N (F-8D) and subsequent Crusader variants. The speed brake was hinged directly to the fuselage and a small cover plate was added below the actuating cylinder. (Detail & Scale)

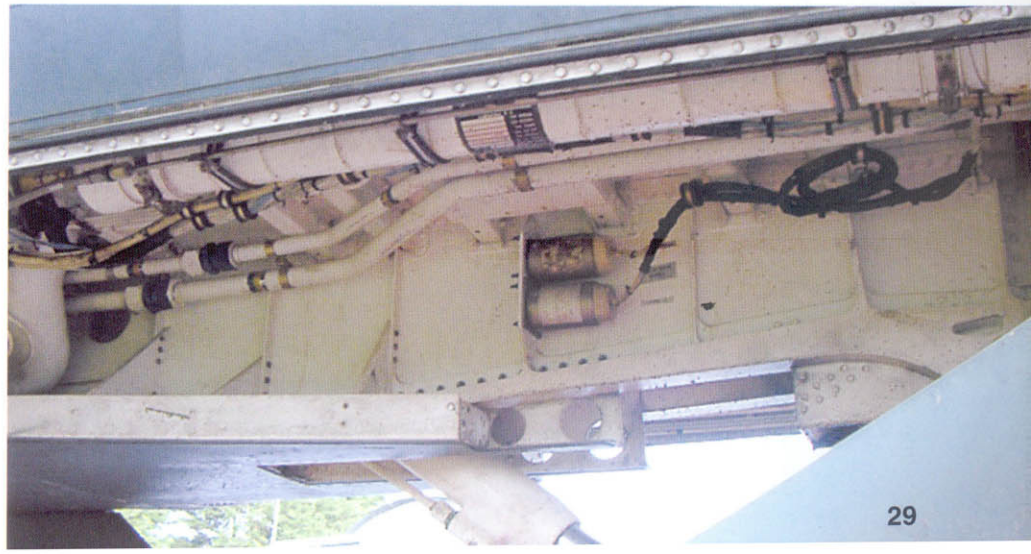
Eliminating the rocket pack provided additional space in the lower fuselage section. F-8s with the upgraded landing gear had the Power Control (PC) system's accumulator function moved from the landing gear tension strut to a separate reservoir cylinder in the speed brake well. This is the left speed brake well looking forward. (Weinel)

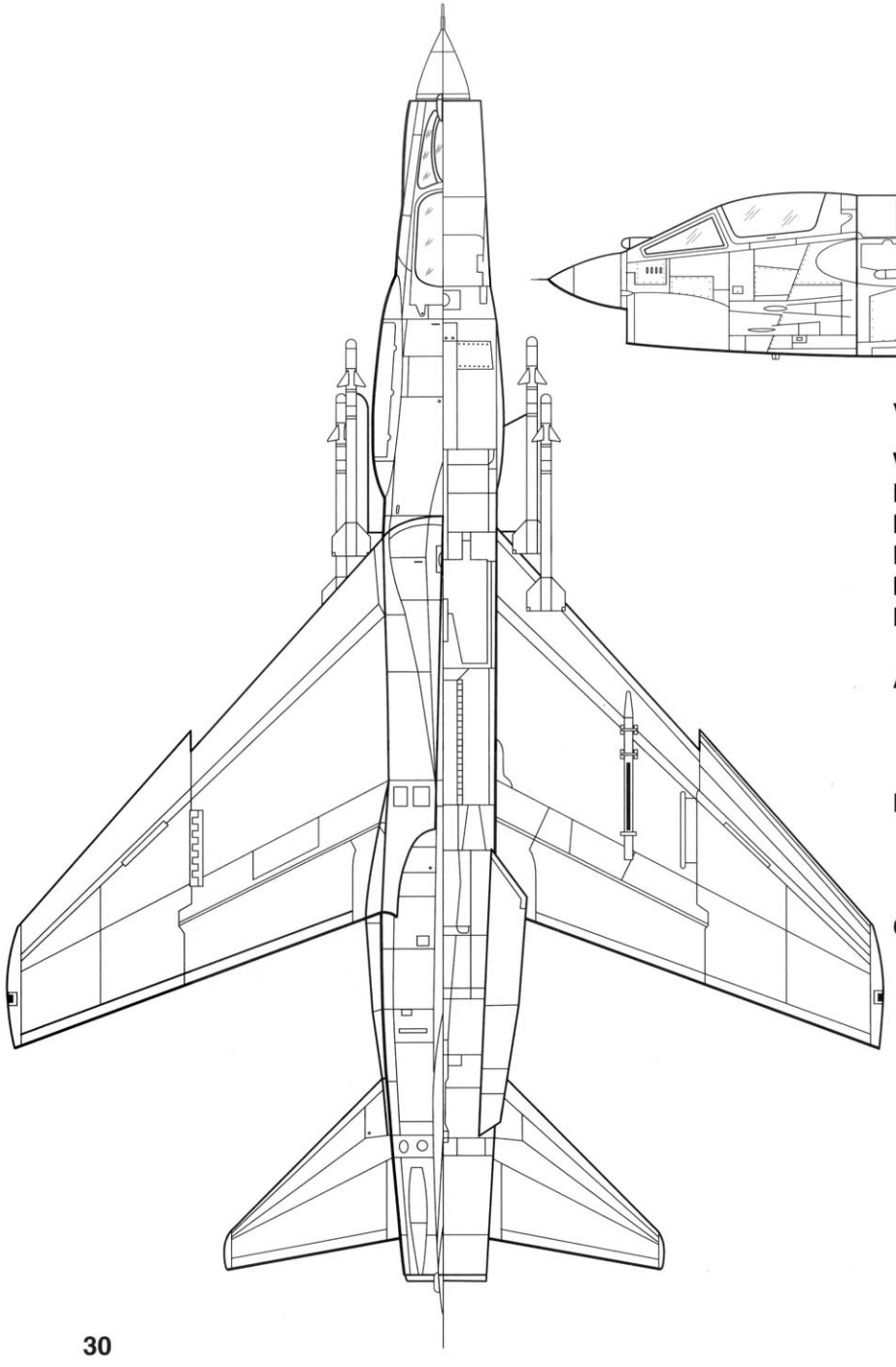
A keel beam separated both sides of the later style speed brake well. Plumbing and wiring differed slightly from side to side. This is the right speed brake well side looking forward. Wiring for the speed brake switches and additional wire bundles were located on this side. (Weinel)

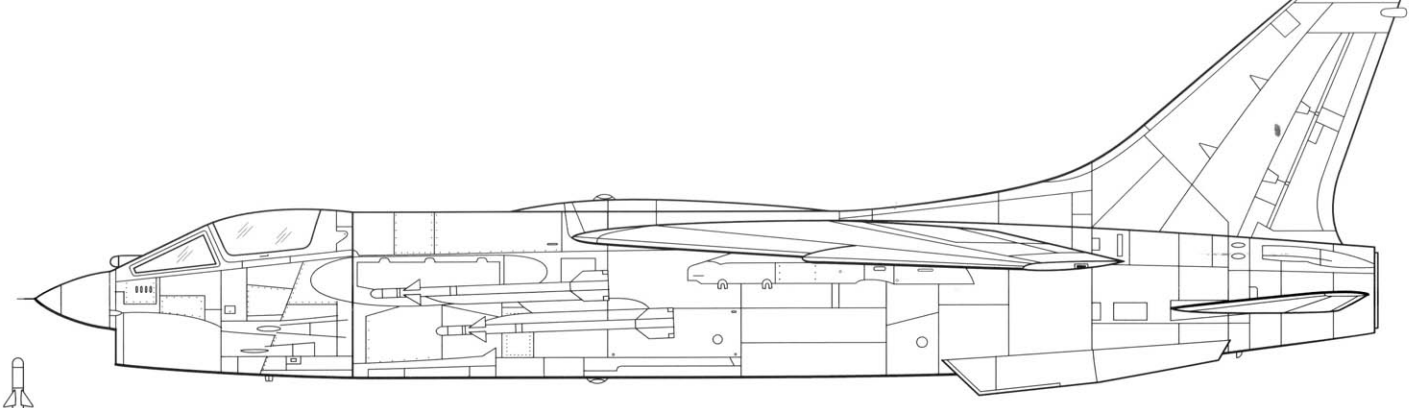
The bulkhead at fuselage station 424 functioned as both the speed brake well's aft bulkhead and the landing gear well's front bulkhead. A rubber rib seal located on the fuselage interface prevented air from entering the speed brake well at high speed. This is the left speed brake well looking aft. (Lubin)

The speed brake was operated by utility hydraulic power and could be fully or partially extended. This speed brake actuating cylinder was mounted to the fuselage keel by a hinge. This allowed the cylinder to travel in an arc as the speed brake opened or closed. A flipper plate attached to the speed brake covered the cylinder when the brake was fully retracted. (Lubin)



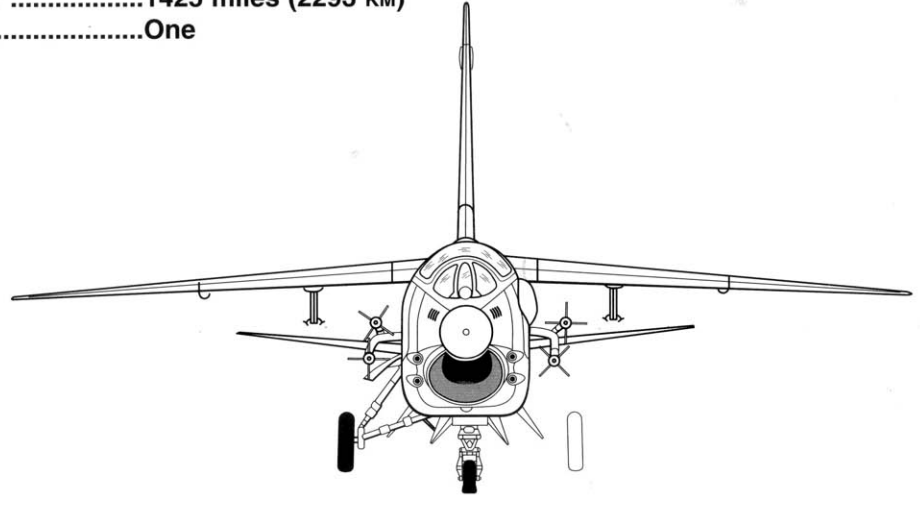


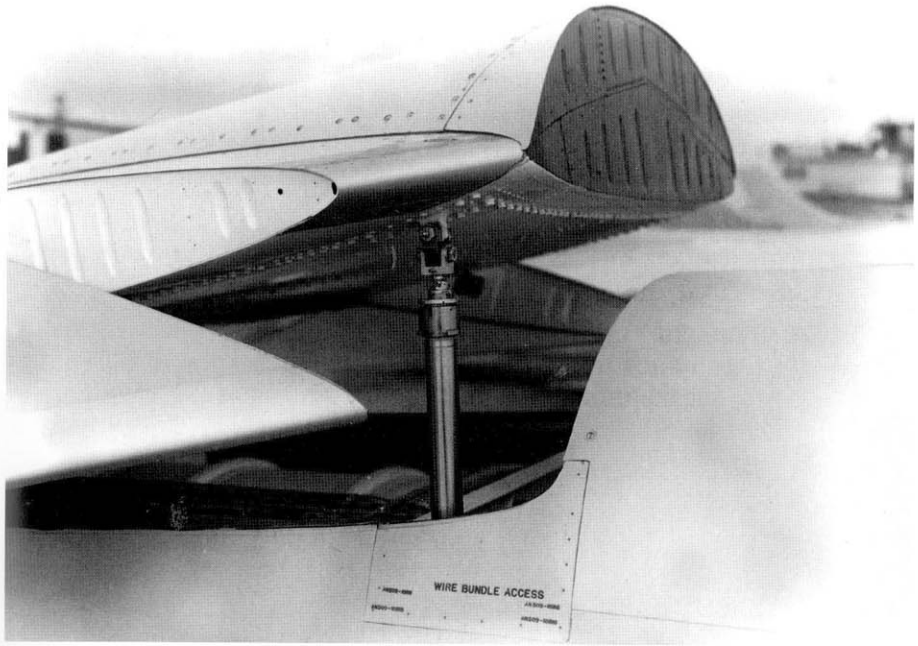




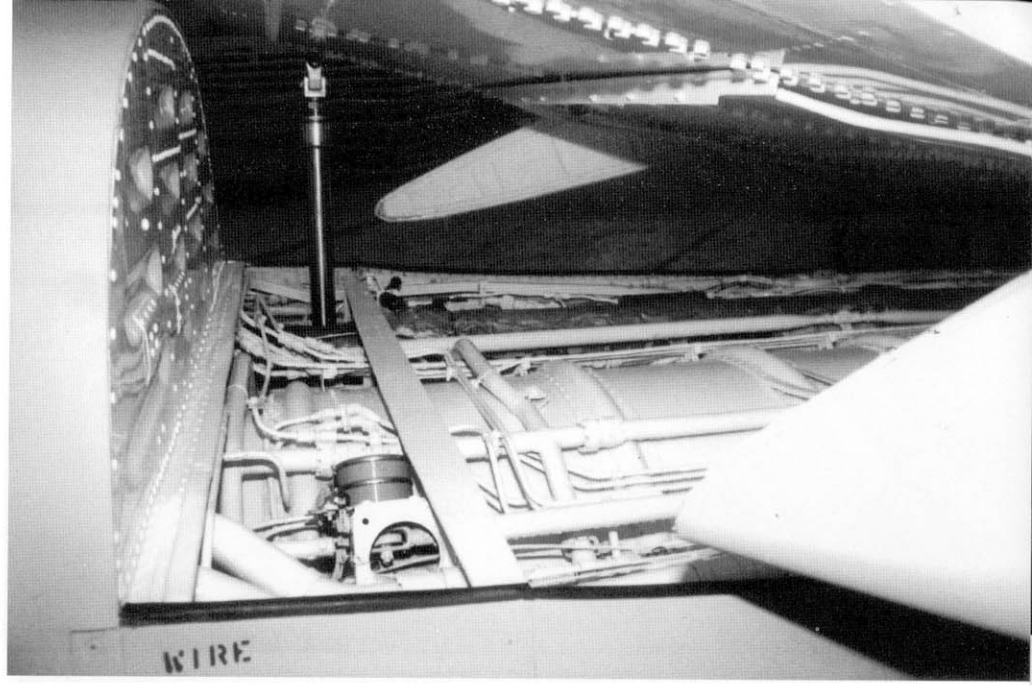
Vought F8U-2NE (F-8E) Crusader Specifications

Wingspan: .....35 feet 8 inches (10.9 M)
Length: .....54 feet 3 inches (16.5 M)
Height: .....15 feet 9 inches (4.8 M)
Empty Weight: .....17,836 pounds (8090 KG)
Maximum Weight: ..34,100 pounds (15,468 KG)
Powerplant: .....One 18,000-pound thrust Pratt & Whitney J57-P-20 afterburning turbojet engine
Armament: .....Four 20MM Colt-Browning Mk 12 cannon with 144 rounds per gun in forward fuselage. Four AIM-9 Sidewinder air-to-air missiles on fuselage pylons. Up to 4000 pounds (1814 KG) of ordnance on two wing pylons.
Performance:
Maximum Speed:..1133 MPH (1823 KMH) – Mach 1.8 – at 35,000 feet (10,668 M)
Ceiling: .....52,350 feet (15,956 M)
Range: .....1425 miles (2293 KM)
Crew:.....One



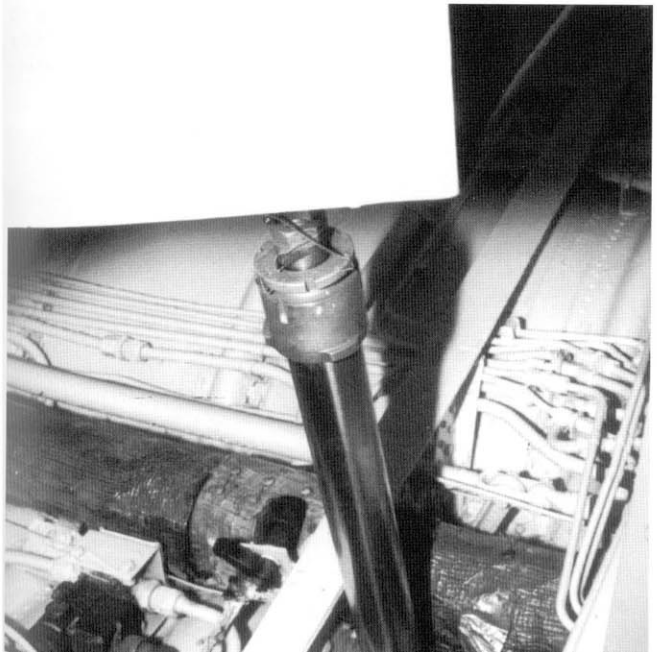


A single clevis linkage attached the variable position wing actuator to the wing main spar's lower right forward corner. (A clevis is a mechanical connector with a split or open center section.) The wing had only two positions, up or down. The lift circuit lacked provision for mid-stroke positioning. The wing had a maximum travel arc of 7°. (Vought)

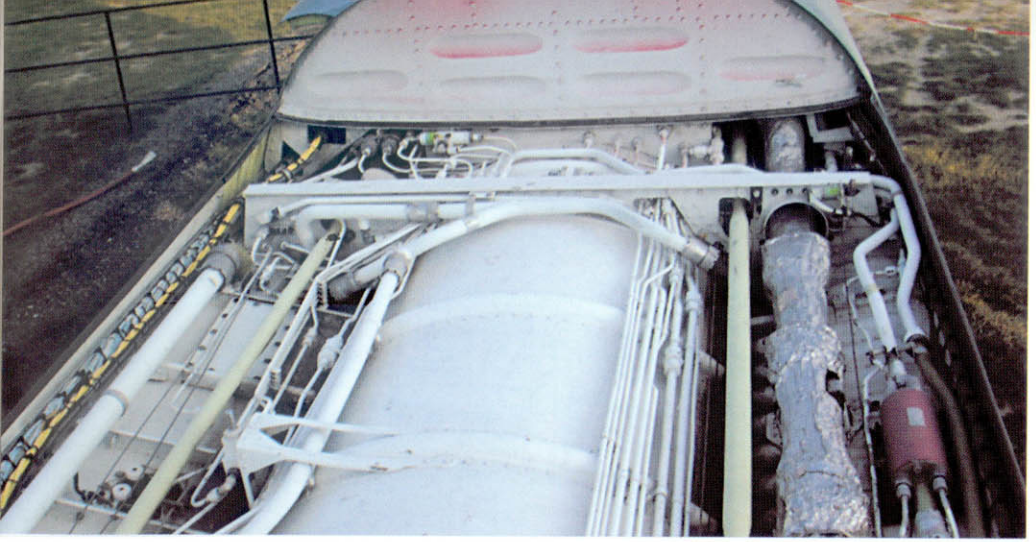


The wing box's formed aluminum front bulkhead was riveted to fuselage ribs and had reinforcing dimples for rigidity. A rubber seal was located on the fuselage skin edge, which sealed on the wing assembly's bottom face. (Author)

The bottom of the center wing panel had several lateral exposed ribs and multiple fastener heads. Hydraulic and pneumatic lines for the leading edge droops and the wing fold mechanism were also located on the wing lower center section. (Nick)



The wing elevation hydraulic cylinder was fastened to the fuselage structure by a hinge at the cylinder's lower end. This allowed the cylinder to accommodate the arc created by the wing's travel when raised. The cylinder had a 3.5-inch (8.9 CM) diameter rod and a stroke of 17.5 inches (44.5 CM). The cylinder assembly's overall height was 34 inches (86.4 CM) and it weighed 30 pounds (13.6 KG). (Author)

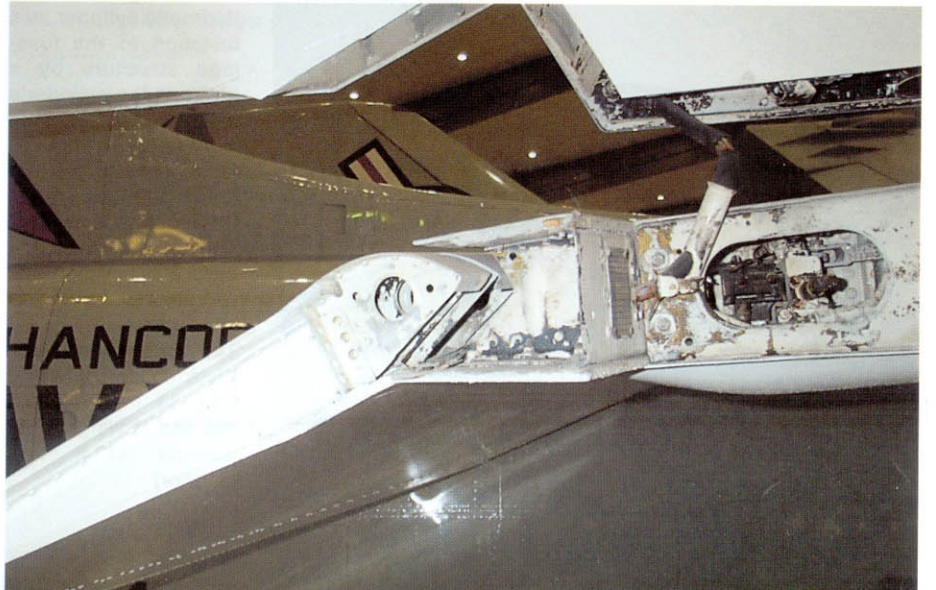


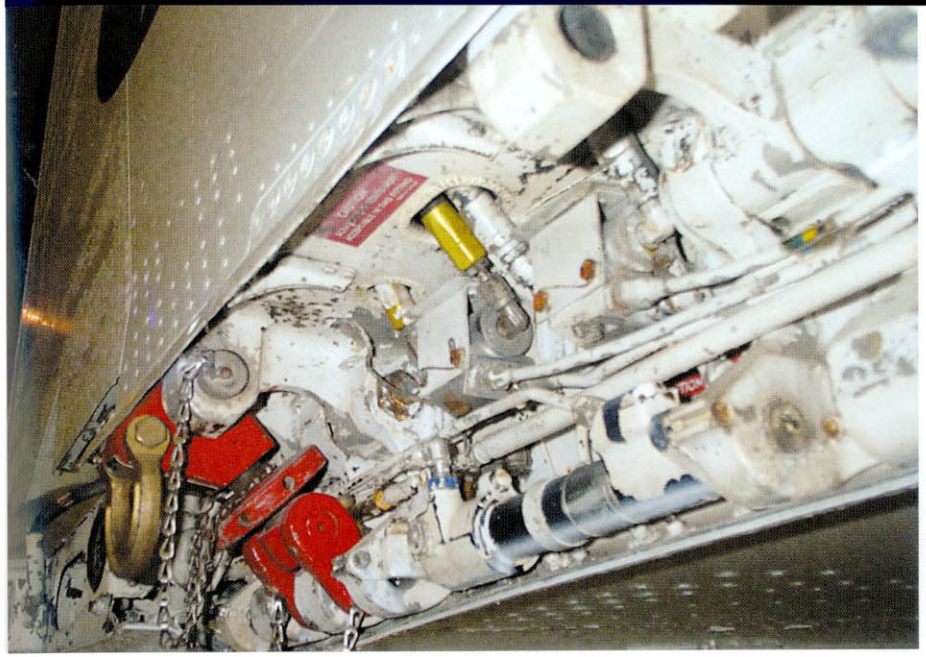
The engine air intake duct located on the aircraft centerline is exposed with the wing removed. An insulated heat exchanger cooling line and the cylindrical Red fuel filter are located to the right. Larger diameter white tubes are fuel transfer lines, while smaller diameter tubing consisted of hydraulic and pneumatic system lines. Wire bundles ran along the outer edges of both sides. Flight control system push rods and cables were also located in this area. (Weinel)

The same VMF-321 F-8K (5A-6/BuNo 146918) is parked on the Andrews AFB ramp in late 1971. Additional improvements in remanufacturing F-8Cs to F-8K standard included adding two external stores wing pylons, additional armor protection, improved internal wiring, and installation of an integral starter probe. The latter was standard on F-8Es and all remanufactured Crusaders. Early F-8s required an external probe be inserted into the aft fuselage starter receptacle to feed compressed air, which drove the engine starter turbine. The integrally mounted starter probe standardized the starter configuration and increased the number of starter carts that could be used with F-8s. (JEM)

An F-8K (5A-6/BuNo 146918) of VMF-321 sits on the ramp at Andrews AFB, Maryland in September of 1971. This Crusader was an F-8C remanufactured to F-8K standard. The main areas addressed by this rebuild were incorporating an improved wing with extended fatigue life, an improved nose landing gear, a change to the F-8E-style main landing gear, fuselage strengthening, and an improved arresting hook shank. (JEM)

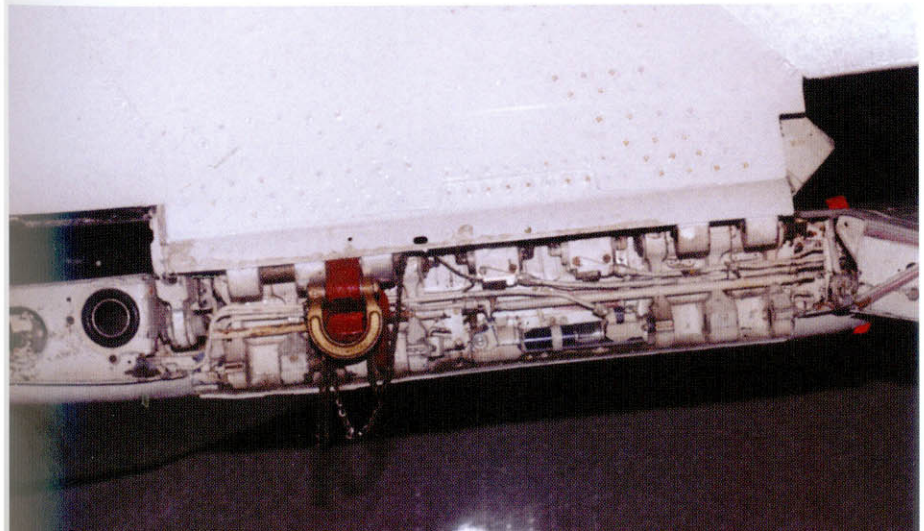
Ailerons were located on the wing center section's trailing edge from wing stations 48 to 134. The ailerons were hinged at this point and had a maximum travel of +15° to -45°. They were constructed of a Vought-patented material called Metalite, which consisted of external aluminum skins over a synthetic core. (Nick)

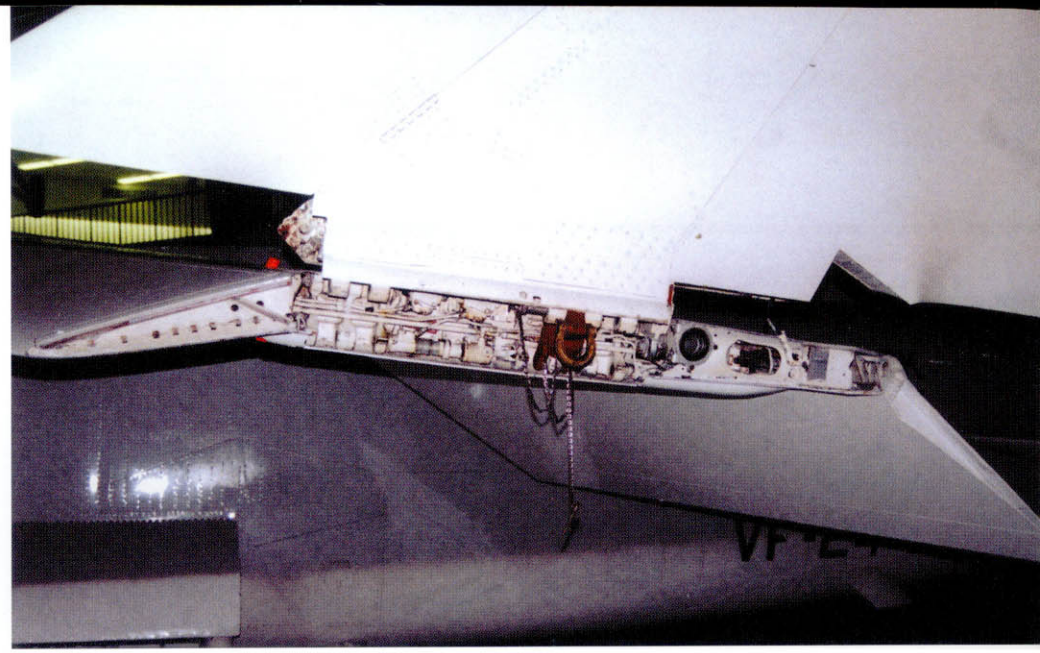




An uplock wing fold jury strut mooring fitting was attached to the outer wing fold bulkhead when the wing tips were folded. This jury strut was painted Bright Red (FS31136) and had a Gold anodized mooring ring. The wing locking lugs are visible on the image's right side. Hydraulic supply tubes for actuating the outer leading edge droops ran from the outer panel via flexible connectors at the wing fold. (Nick)

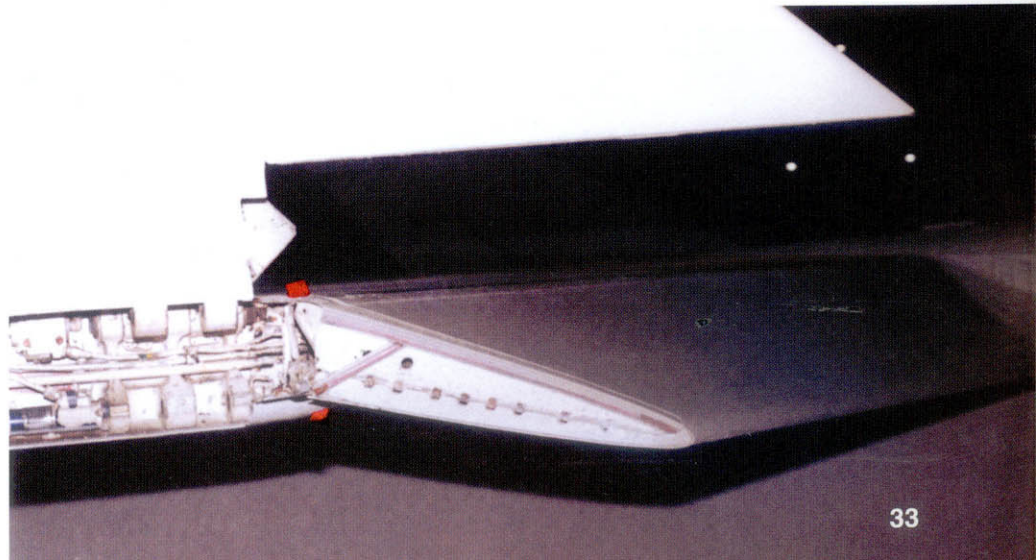
The outer wing panel was hinged at the upper surface. The wing fold actuator cylinder was connected at the outer panel hinge's aft end. Two locking pin cylinders were located on the wing fold's bottom edge. One cylinder was forward and the other was at the wing fold hinge's aft end. Two Bright Red warning flags protruded from the wing's top and bottom just inside of the wing fold hinge, aft of the leading edge droop, when the lock pins were retracted. (Nick)

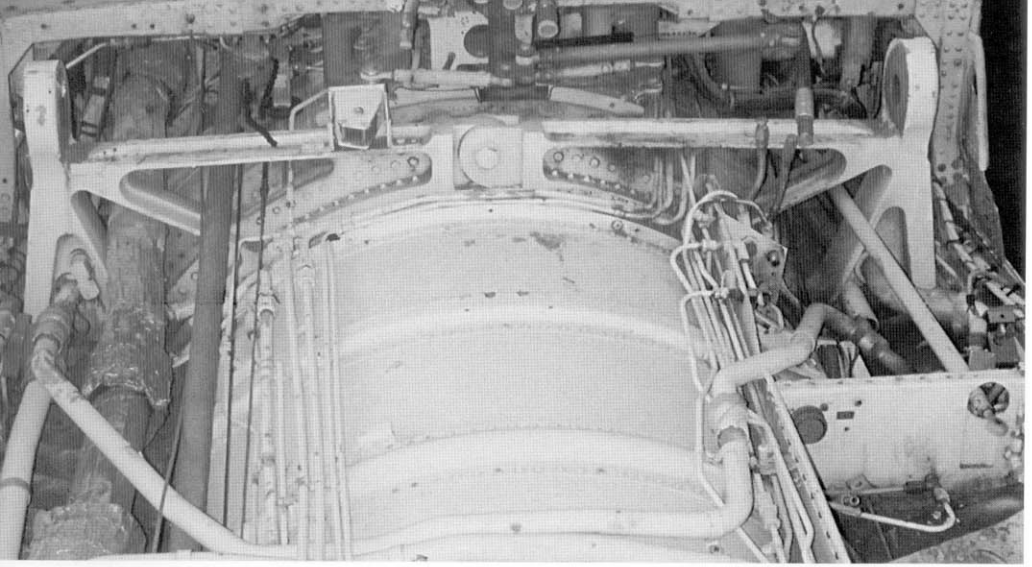




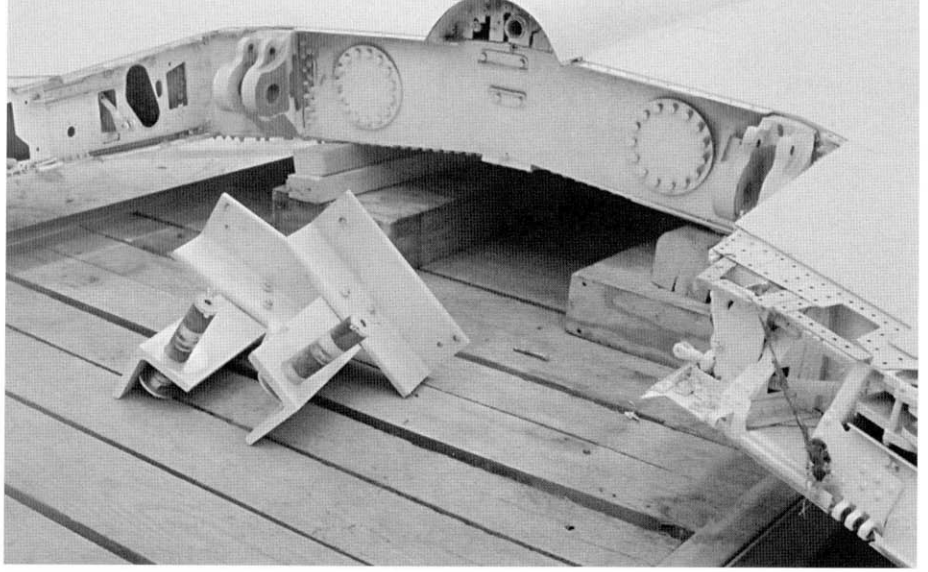
The F-8's outer wing panels folded upward at a 90° angle for storage. This reduced the wingspan from 35 feet 8 inches (10.9 M) to 22 feet 6 inches (6.9 M). The wing fold and hinge mechanism was the same on both right and left wings. No control surfaces were located on the outer wing panels, which eliminated the need for complex mechanisms. (Dann)

The entire wing leading edge, from the fuselage intersection to the tip, was hinged and powered down to form the leading edge droop. Maximum travel of the leading edge droop was -25°. The interface between the outer panel leading edge and center section leading edge had a static seal, which prevented buffeting at high speed. (Nick)





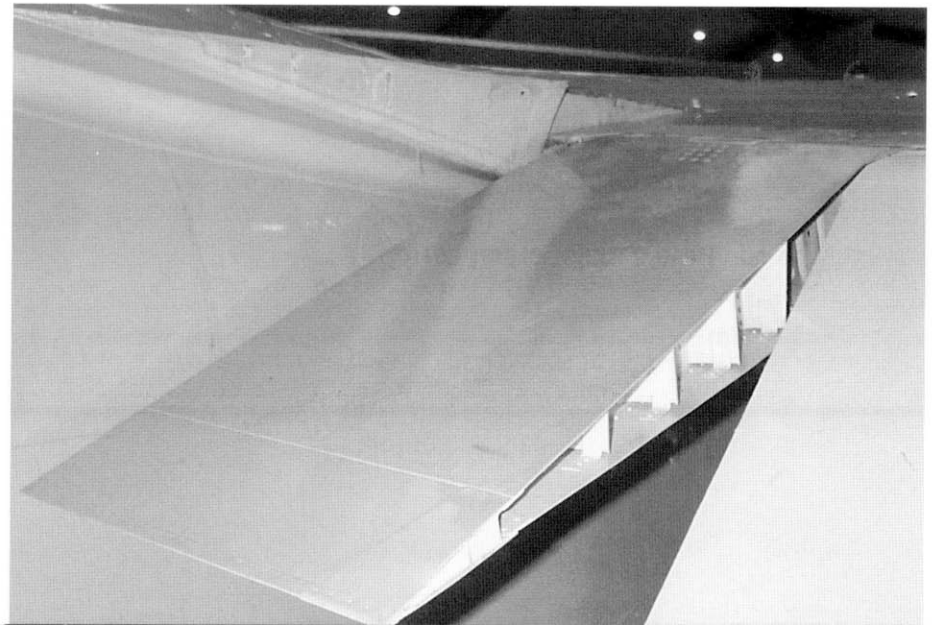
The wing main pivot hinge was located at fuselage station 472. The wing hinge assembly's center section was attached to the fuselage by two cast 'A' frame support arms that formed a 90° angle. One leg of each support arm was fastened to the fuselage main stringer, while the other leg was joined to the opposite side 'A' frame by a single bolt on the fuselage centerline. (Weinel)

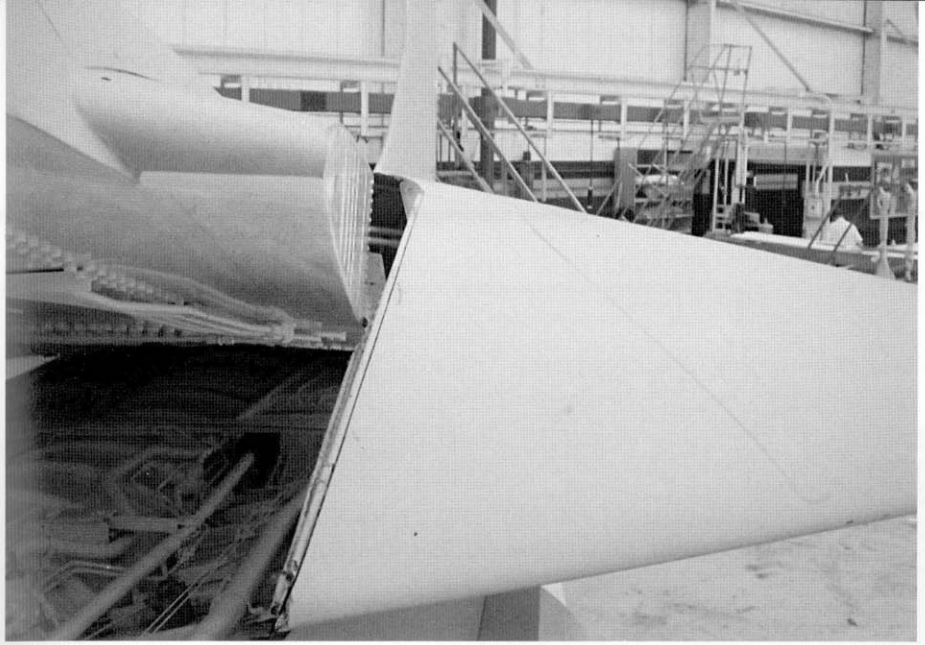


The two wing hinge assembly outer flanges were attached to each aft wing spar side. Once placed on the fuselage 'A' frame hinge member, a hinge pin was inserted to each side. The hinge mounting flanges were fastened to the aft bulkhead wing box assembly. (Weinel)

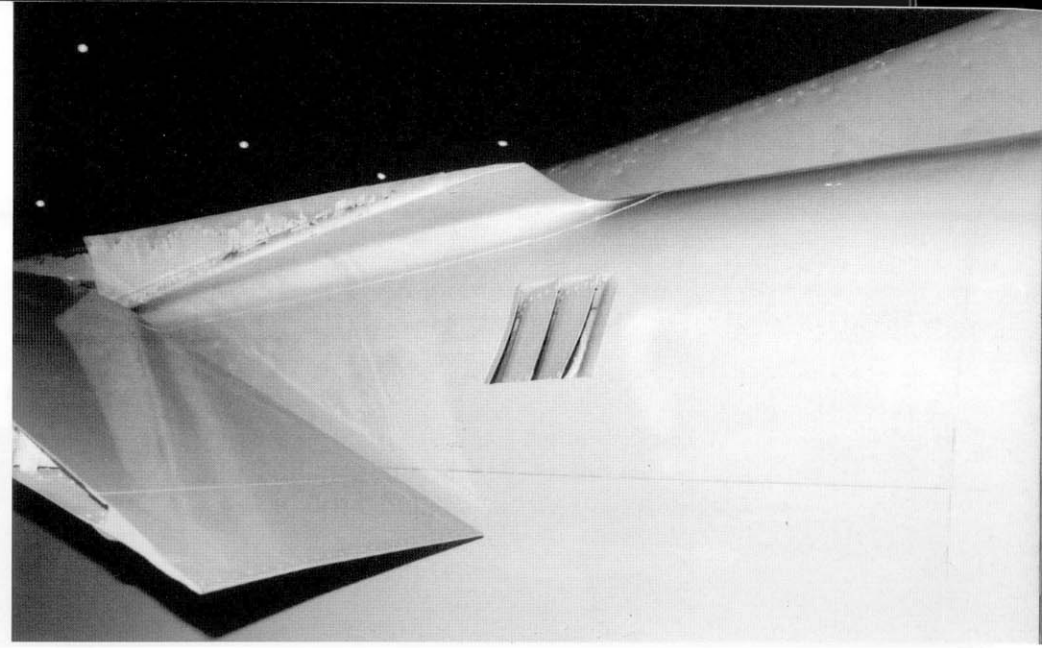
The aileron leading edge and actuation rod connection points were exposed when the aileron was deflected on Crusaders not equipped with the Boundary Layer Control (BLC) system. The aileron wing spoiler was mounted in front of the aileron. When the aileron deflected more than 2°, the spoiler was deflected an amount proportional to aileron deflection. (Nick)

The wing center section's trailing edge was hinged in two segments. The inboard portion functioned as the wing flap and the outer portion functioned as the aileron. The flaps operated independently of the ailerons and had a maximum deflection of 20°. Both ailerons had a maximum deflection of 45°. (Nick)



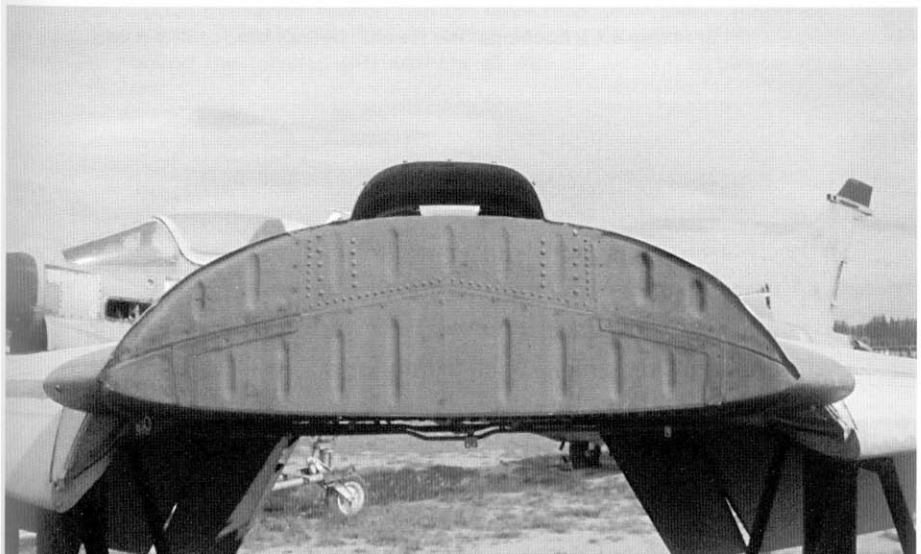


The leading edge droop's inner corner angled inward towards the fuselage when the wing was raised and the droop fully deflected. In this configuration, the inner corner of the droop would actually be closer to the fuselage centerline than the outer edge of the fixed center wing bulkhead. (Weinel)

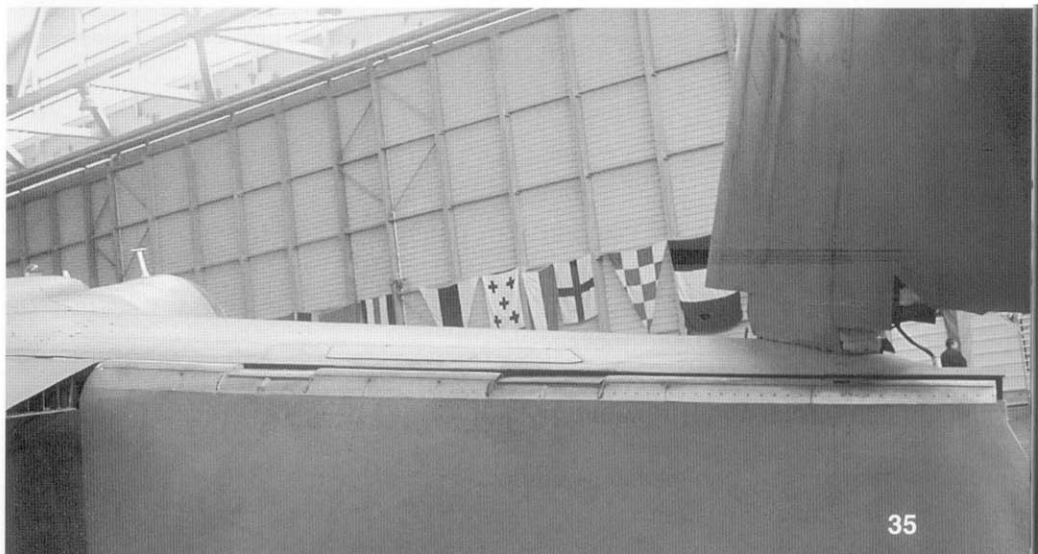


Engine compartment cooling vents are located just below and aft of the flaps. The inner flap section is fully deflected on this Crusader. When raised, it rested even with the fixed fairing that formed the wing root trailing edge fillet. (Nick)

The wing center section's forward bulkhead consisted of multiple stamped aluminum panels fastened to former ribs. The upper center panel was permanently attached to the former by rivets. Removable lower and outer panels provided access to the inner wing for maintenance. This bulkhead's general configuration was the same on all Crusaders, except for the double plate stiffeners added to the remanufactured aircraft. (Weinel)



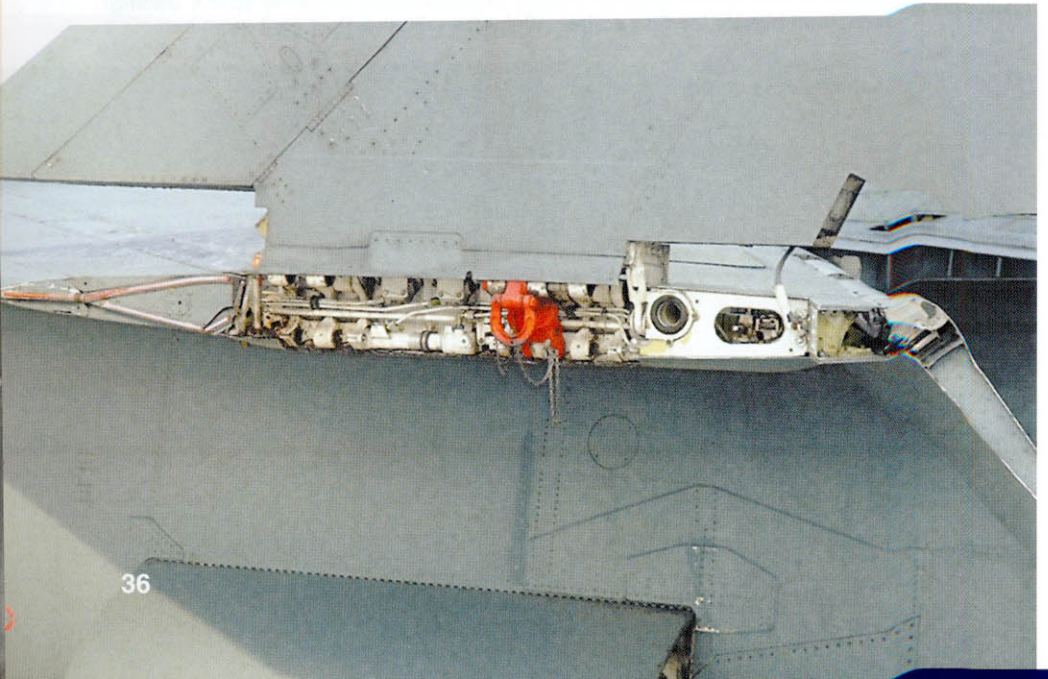
A Boundary Layer Control (BLC) system was installed on F-8E (FN) and F-8J aircraft. The BLC increased lift and lateral control effectiveness, which permitted reduced airspeed during landing. High pressure heated air from the engine's compressor section was piped to the wing, where it was forced through slatted nozzles along the wing spar's trailing edge over the flap and aileron leading edges. (Weinel)

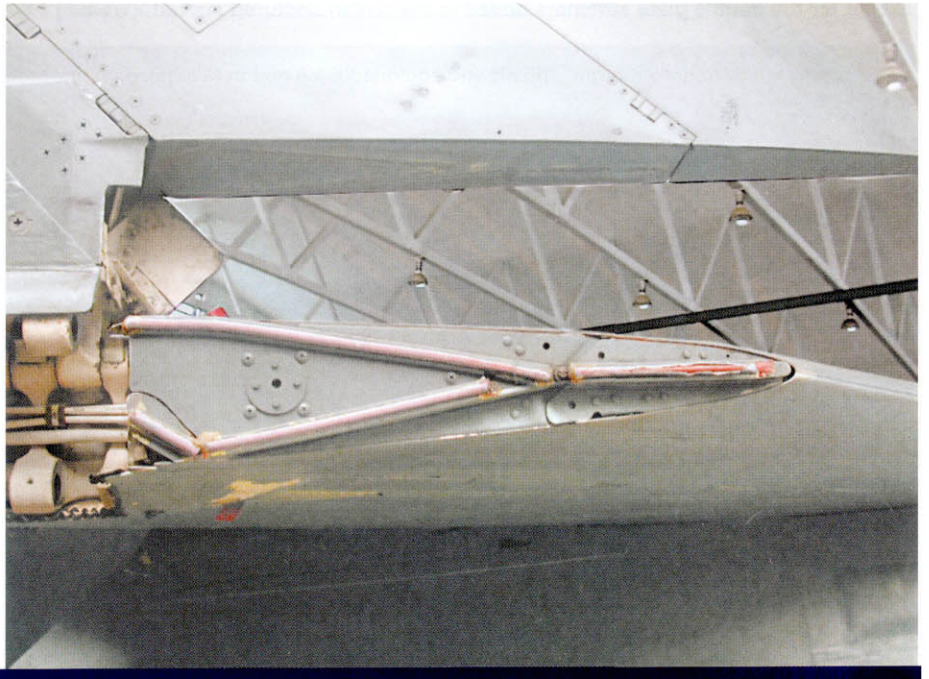


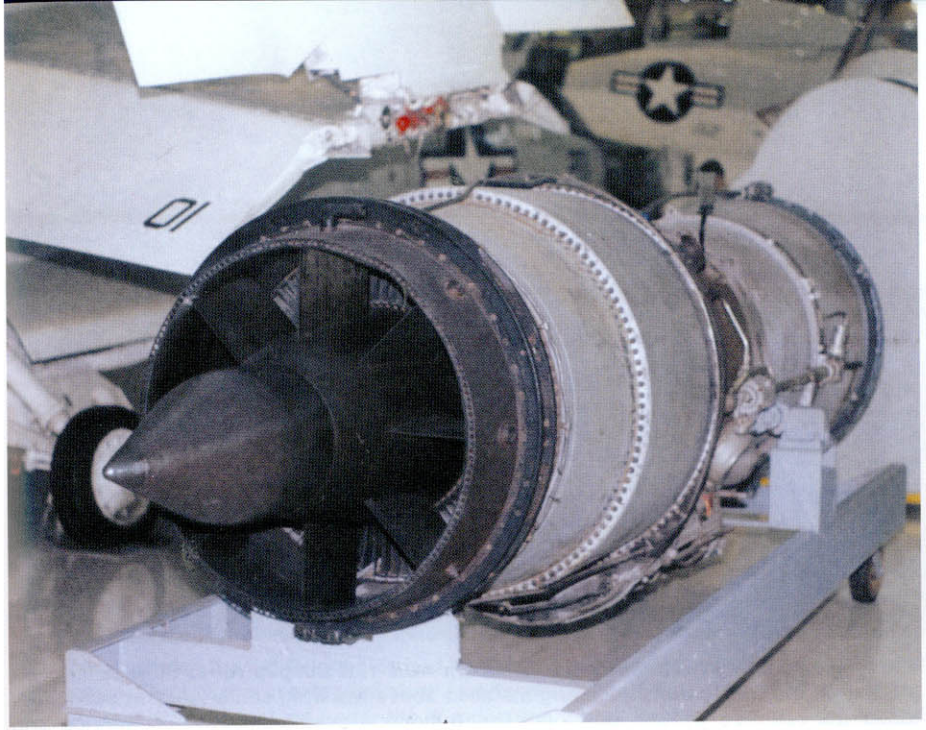
F-8E (FN)s and F-8Js were equipped with a full span leading edge double droop to increase wing camber (surface curvature) and effectively decrease landing speed. The double droop basically split the one-piece droop of earlier variants into two sections along the entire wingspan. Six hydraulic cylinders – three on each wing – actuated the leading edge droops. Two cylinders operated the inboard section droop and one cylinder operated the outer wing panel droop. This F-8J (NP-213/BuNo 149187) was assigned to VF-24 aboard USS HANCOCK (CVA-19) during the early 1970s. (JEM)

The double droop wing's folding mechanism was identical to the single droop wing's mechanism. Both the forward droop and aft aileron were hinged at the lower surface to provide efficient operation. Outer wing surfaces hydraulically folded up and slightly inboard. (Wrobel)

The inboard section's forward segment drooped 36.9° and the aft segment drooped 7.3°. The forward segment of the outer panel drooped 55° and the aft segment drooped 20°. The static seal between the outer section and outer panel droops was also redesigned from those on single droop wings. (Weinel)





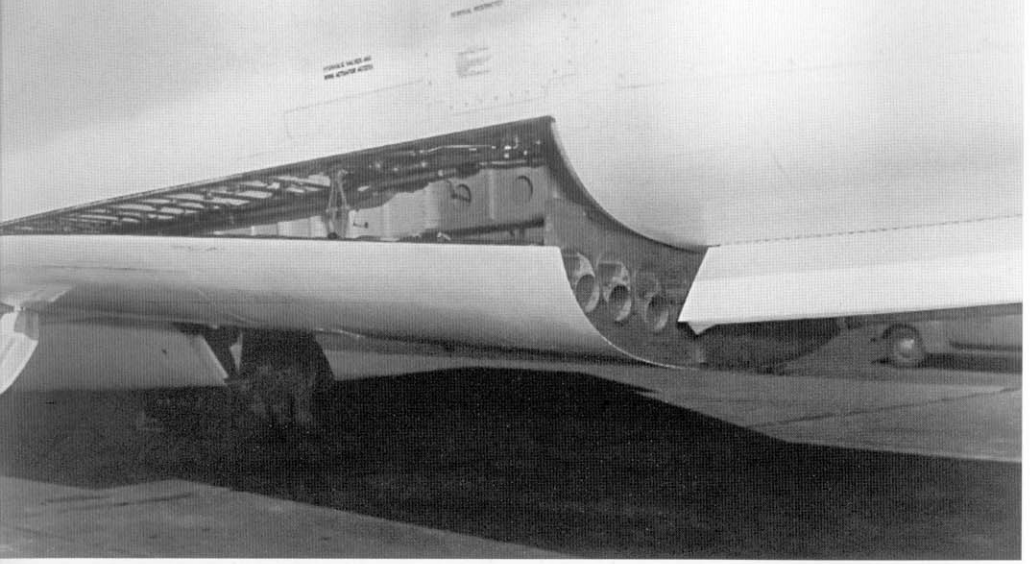


Pratt & Whitney J57 series turbojet engines powered the Crusader family. The J57 was a two-spool, axial flow, chamber combustion turbojet with afterburner for thrust augmentation. The engine's nominal dimensions were 22 feet 6 inches (6.9 M) in length by 42 inches (106.7 CM) in diameter. Afterburning thrust ratings varied from 16,000 pounds on the F-8A's J57-P-4 to 18,000 pounds on the F-8D/E's J57-P-20. (Nick)

The wing pylon developed for the F-8E and subsequent remanufactured variants utilized the Aero 7A series ejector rack. The pylon's upper section was an airfoil-shaped casting with four mounting holes for bolting the rack to the wing. The lower section consisted of trailing edge skins and access doors. The pylon's left side had two access doors, while the right side had three. This pylon was 126 inches (320 CM) long, 5 inches (12.7 CM) wide, 17 inches (43.2 CM) high, and weighed 179 pounds (81.2 KG). (Trombecky)

The LAU-7 launcher rail was carried on each fuselage side above and aft of the gun bays and forward and below the wing leading edge. The rail's front contained the fin retainer spring clips, while the center section had the store hold down detent (lock) mechanism for securing the item onto the rail. The aft end enclosed a 1.6 gallon (6 L) nitrogen storage bottle for cooling the Infrared (IR) seekers of AIM-9D Sidewinder Air-to-Air Missiles (AAMs). (Dann)

Two Philco (now Ford Aerospace) AIM-9 Sidewinder AAMs were mounted on the dual rail 'Y' adapter. This adapter required using an LAU-7 rail for each missile. An AIM-9C radar-guided missile is mounted above an AIM-9D IR guided missile. Mixed loads of radar and IR-homing AIM-9s were common early in the Sidewinder's career. The AIM-9 was 9 feet 5 inches (2.9 M) long, 5 inches (12.7 CM) in diameter, and weighed 190 pounds (86.2 KG). (US Navy)

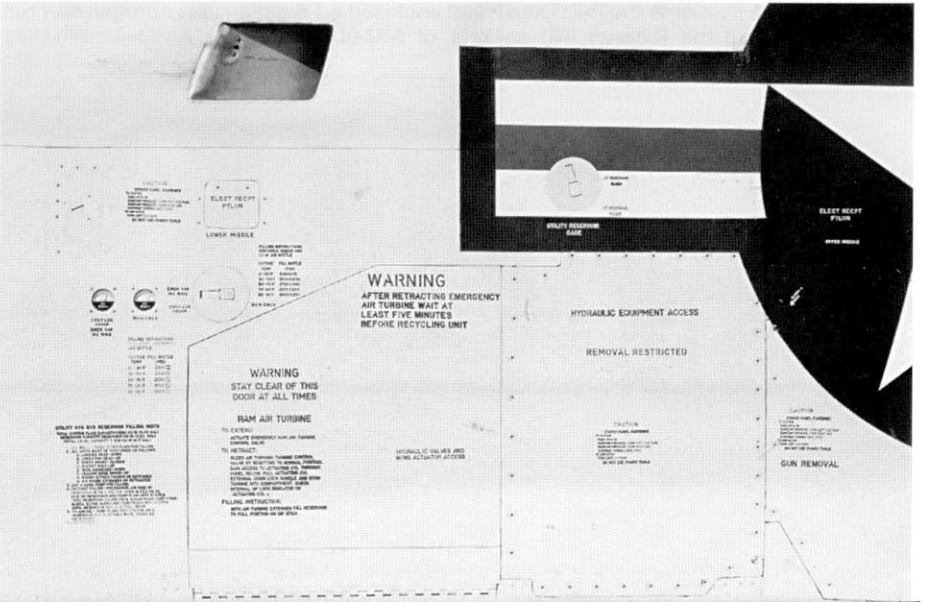


F-8A through F-8C Crusaders were equipped with a lower fuselage internal rocket pack just in front of the main landing gear. This pack carried thirty-two 2.75-inch (70MM) 'Mighty Mouse' Folding-Fin Air Rockets (FFARs). Each 4-foot (1.2 M) long 'Mighty Mouse' weighed approximately 20 pounds (9.1 KG). Extreme problems were encountered with the rocket pack's effectiveness and it was never used in squadron service. The pack was phased out beginning with the F8U-2N (F-8D). (Vought)

The F-8E was designed to carry Martin/Maxon AGM-12B Bullpup Air-to-Surface Missiles (ASMs) on the wing pylons. A fairing installed above the wing center section accommodated the required system controls. The Bullpup proved ineffective in service and Crusader squadrons never used it on operations. Four 5-inch (12.7 CM) Zuni FFARs are mounted on the fuselage 'cheek' pylons. (Vought)

F8U-1 (F-8A) through F8U-2 (F-8C) aircraft employed this outlet vent on the right fuselage side just below the wing leading edge. This vent was for exhaust from the engine bleed air driven alternator turbine and environmental cooling system heat exchanger. Each system vented its gases through one of the two vents. Access panels below this vent are for (left to right): the pylon aft fastening point, pylon electrical receptacle, utility pneumatic reservoir filler, and the pylon front fastening point. (Nick)

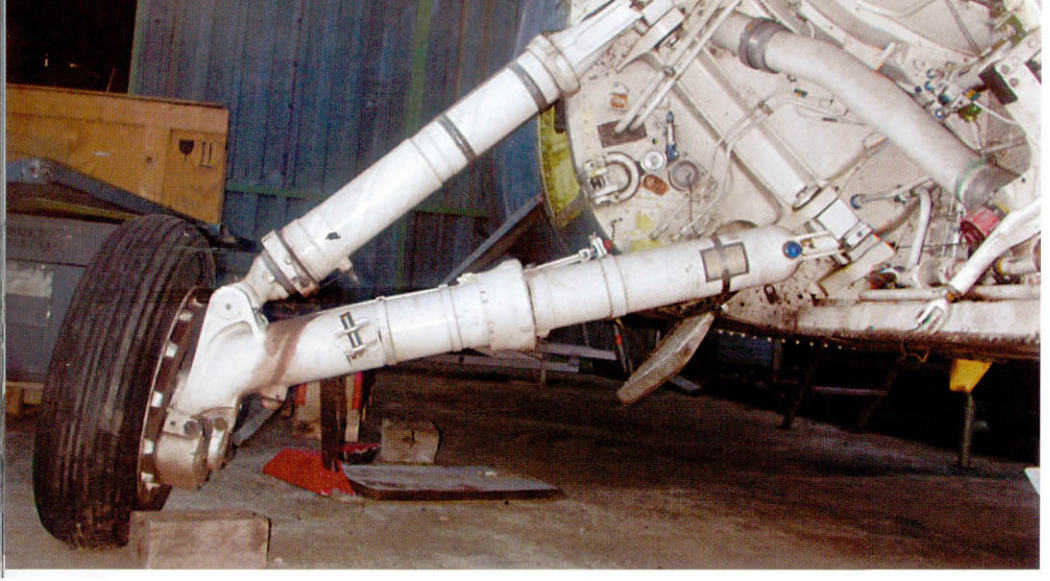
Later Crusaders employed a single chamber vent for the alternator turbine and environmental cooling system heat exchanger. Two pressure gauges – one for the utility hydraulic reservoir and the other for the emergency pneumatic reservoir – were located below this vent. The air bottle filling and the utility hydraulic system reservoir filling instructions are in large lettering below these gauges. (Vought)



The 'Y' adapter on the F-8's right side had its upper arm extended outward and upward at a 75° angle. The lower arm extended away and downward from the fuselage at a 45° angle. A support brace was located under the 'Y' adapter's center leg between the adapter and the fuselage. (US Navy)

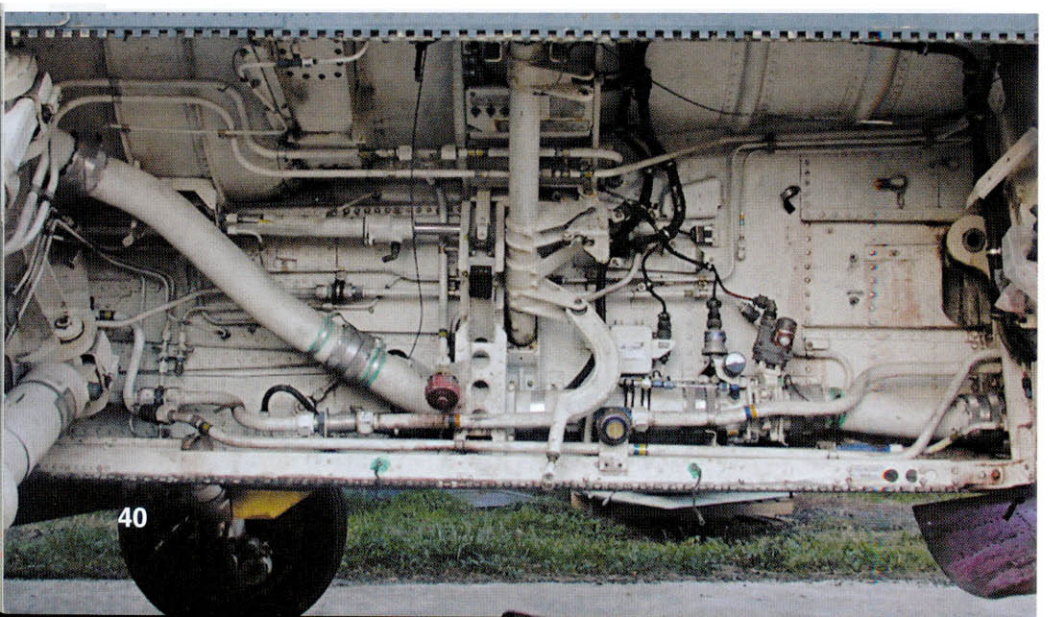
Deck crewman load 5-inch Zuni FFARs onto an F-8E aboard an aircraft carrier – believed to be USS TICONDEROGA (CVA-14) – in August of 1964. Each Zuni was approximately 110 inches (279.4 CM) long and weighed approximately 105 pounds (48 KG), depending upon the warhead. The rockets were loaded into LAU-33 twin-tube launchers that were mounted on a Vought 'Y' adapter fitted to the LAU-7 missile rail.

The 'Y' adapter on the left side differed from the right side adapter. The upper arm on the left side adapter did not curve upward. It extended outward at a 45° angle to provide clearance for the extended in-flight refueling probe. In this configuration, the lower Zuni tube was parallel to the ground and the upper tube was at a 45° angle. A support brace also connected the left 'Y' adapter's center leg to the fuselage. This Crusader is fitted with a nose boom for collecting data during test flights. It was not installed on standard F-8s. (Vought)



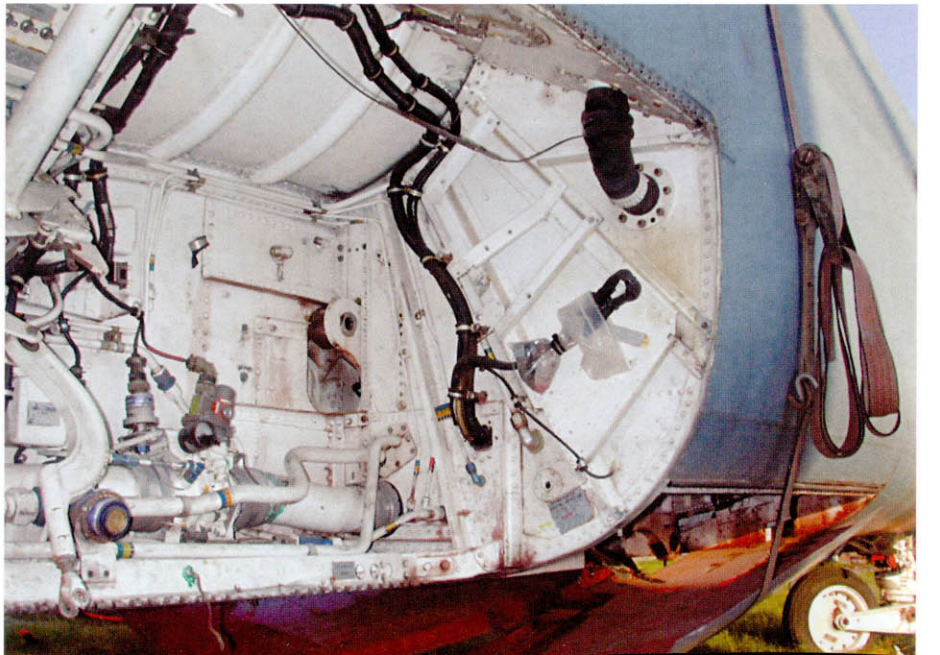
The right main landing gear well's aft bulkhead at fuselage station 491 provided fastening points for the landing gear tension (main) strut and shock strut. A tie-down shackle was located near the bulkhead's outer edge at approximately the 8 o'clock position. The gear was retracted forward into the landing gear well. (Weinel)

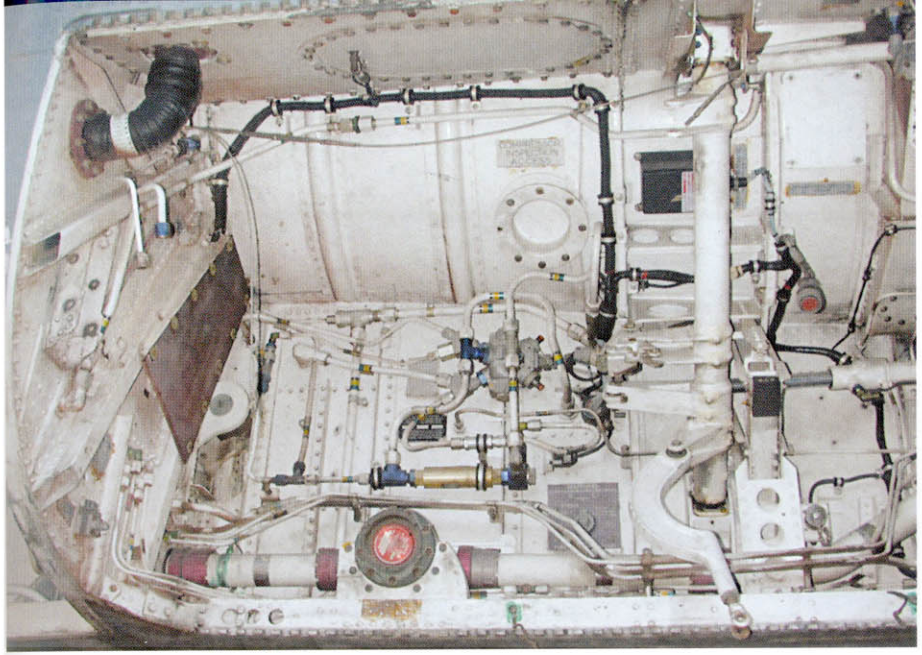
Both main wheel wells were similar, but not identical. Right wheel well main components included the large diameter main fuel line, which angled upward from the well's bottom, and the Power Control System 2 (PC2) hydraulic system pressure indicator. The door actuator cylinder is in the well's center. This cylinder was attached to the main landing gear torque tube and rotated the tube to open and close the doors. The landing gear uplock mechanism was attached to the main gear torque tube. (Weinel)



The F-8's tricycle landing gear was housed completely within the fuselage when retracted. The main landing gear consisted of a tension strut (the lower large diameter arm), an oleo-type shock strut (the larger diameter upper arm), and a combination drag strut/actuator cylinder. The latter was attached to the tension strut's lower aft end. (Weinel)

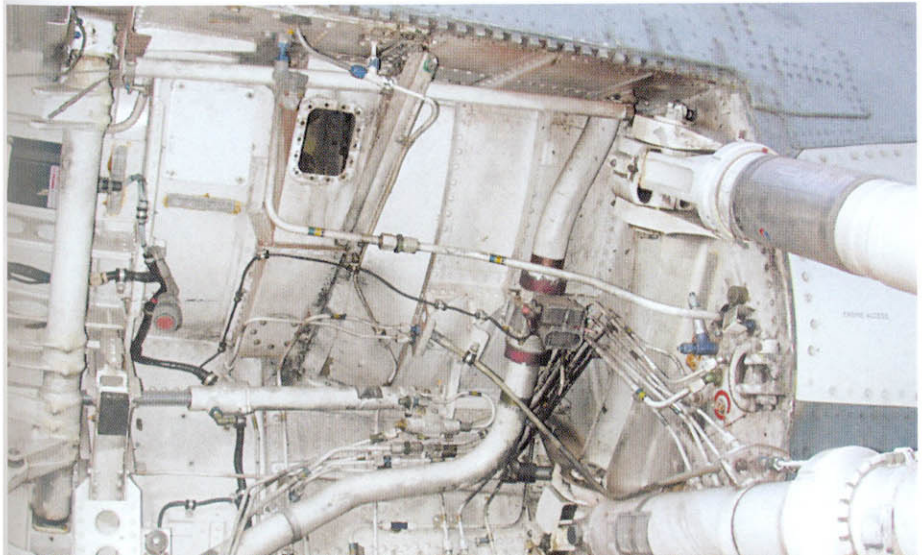
The right main gear well's front bulkhead was located at fuselage station 424. It was devoid of any indicators or adjustment points. The fuel system vent port was located near the bulkhead's lower edge, above the Silver information plate. F-8 landing gears, wells, and door inner surfaces were painted Insignia White (FS17875). (Weinel)

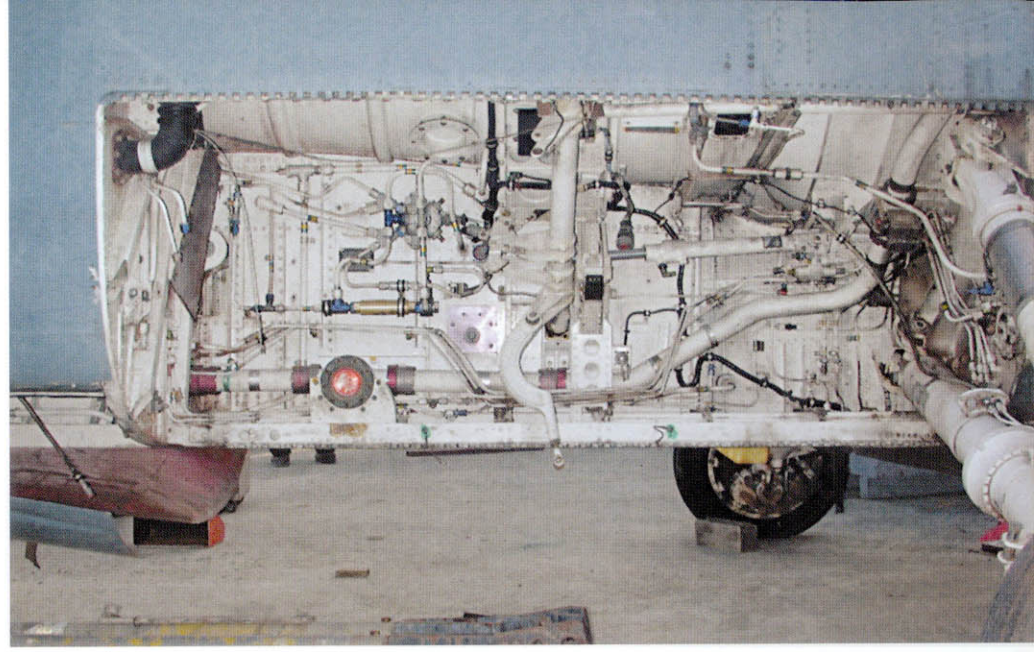




The left landing gear well's front bulkhead was similar to the right side in that it lacked any indicators or attachment points; however, there was no fuel system vent port in the left well. A tire bumper plate mounted to the front bulkhead protected various tubing and wiring from damage when the main gear tire was retracted. (Weinel)

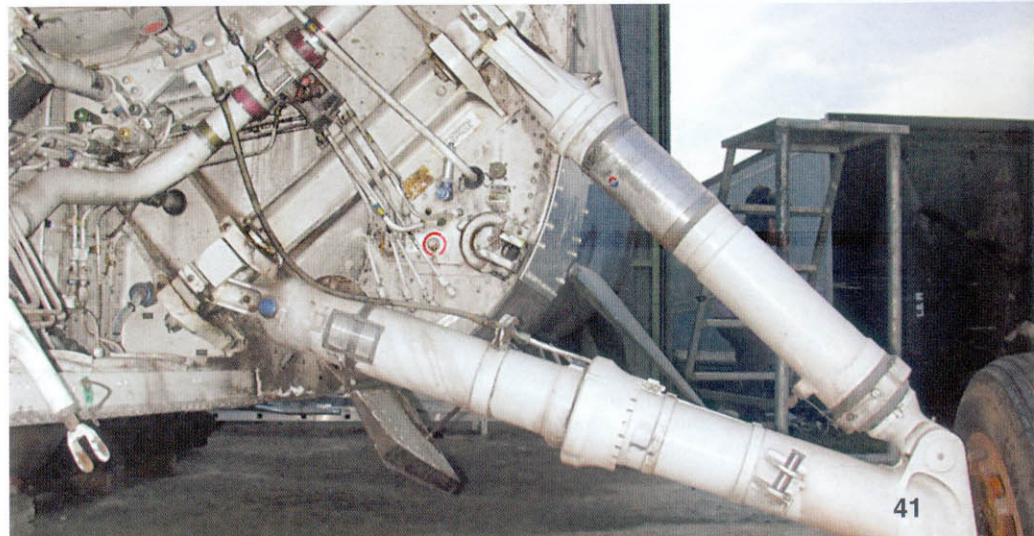
The left landing gear well's aft bulkhead was similar to the right well's aft bulkhead. The only difference was the addition of the engine starting receptacle located above the tie-down shackle on the lower well area. Another unique feature of the left gear well was the wing manifold manual shut-off switch, which was located in the main fuel riser at the well's aft end. (Weinel)

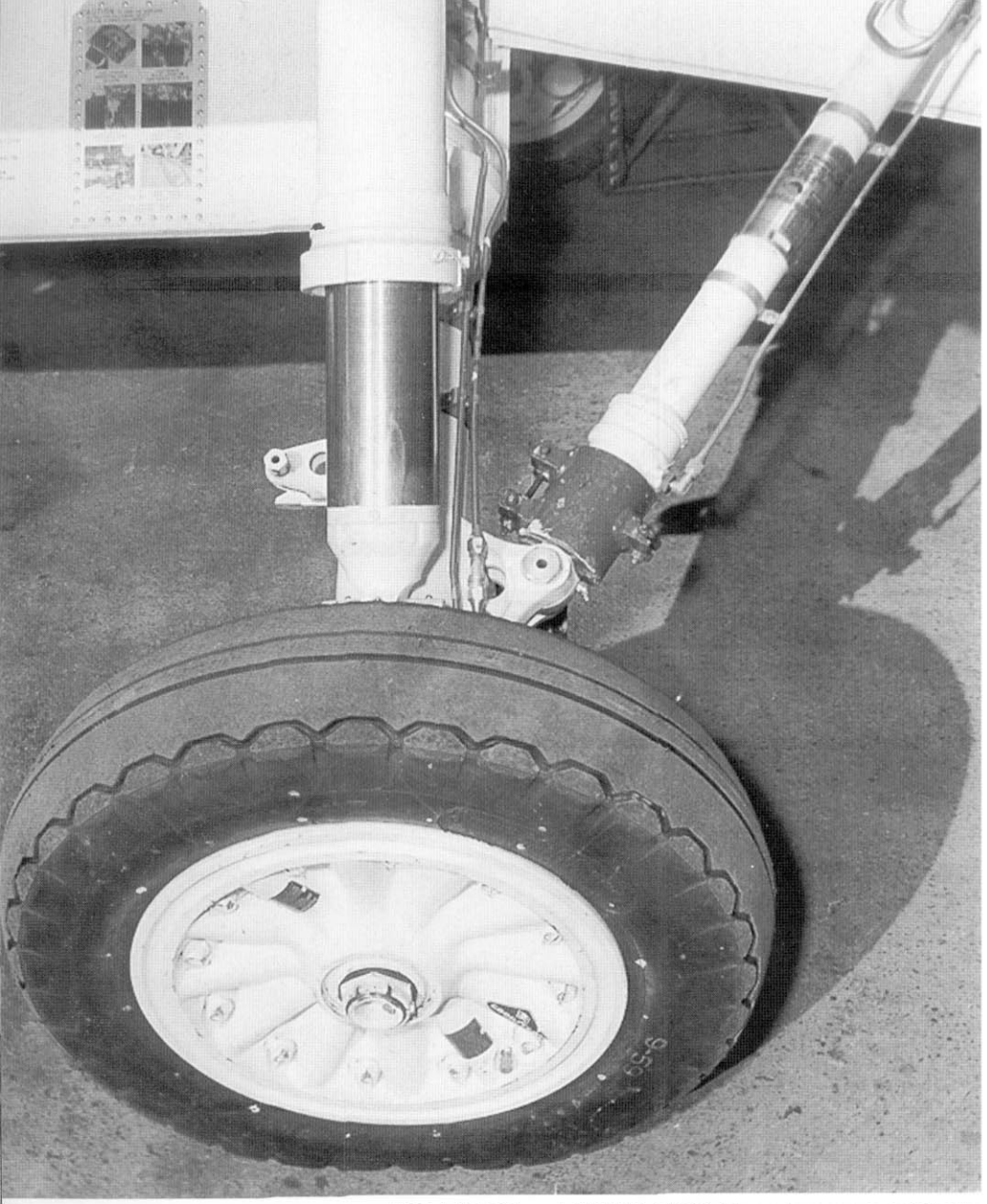




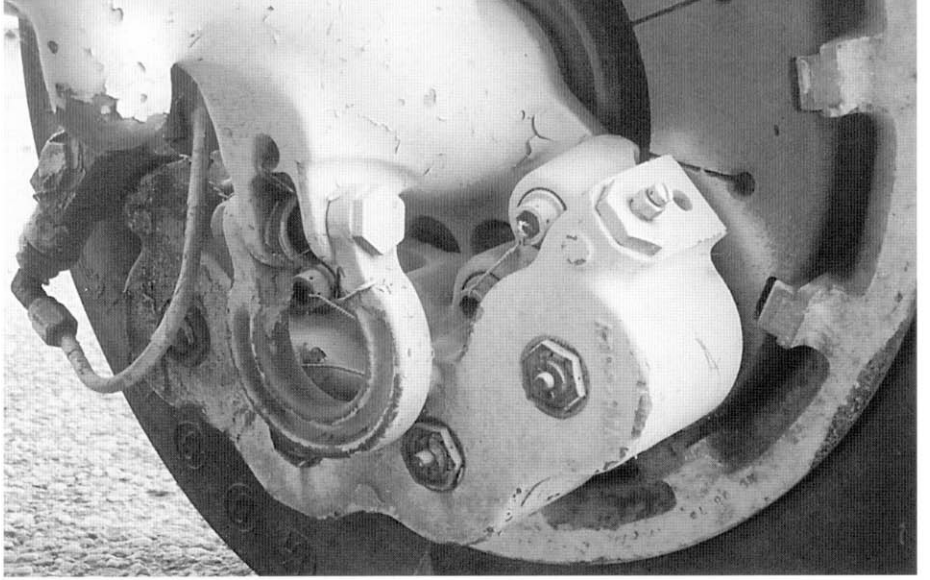
The main difference between the right and left wells was that the left well contained the fueling system controls. The central fueling point adapter was located on the main fuel line. This adapter had a Dark Gray cover, with a center-mounted Bright Red information plate. The engine compressor inspection port and the fuelling procedure selection switch were located in the left well. (Weinel)

The main tension strut on early F-8 main landing gears also served as an accumulator in the hydraulic PC system – one on each side. The shock strut cylinder was connected to the tension strut's upper end and the actuating cylinder was attached to the aft end. The silver pin on the tension strut's front is the landing gear uplock roller that engaged the uplock mechanism. (Weinel)



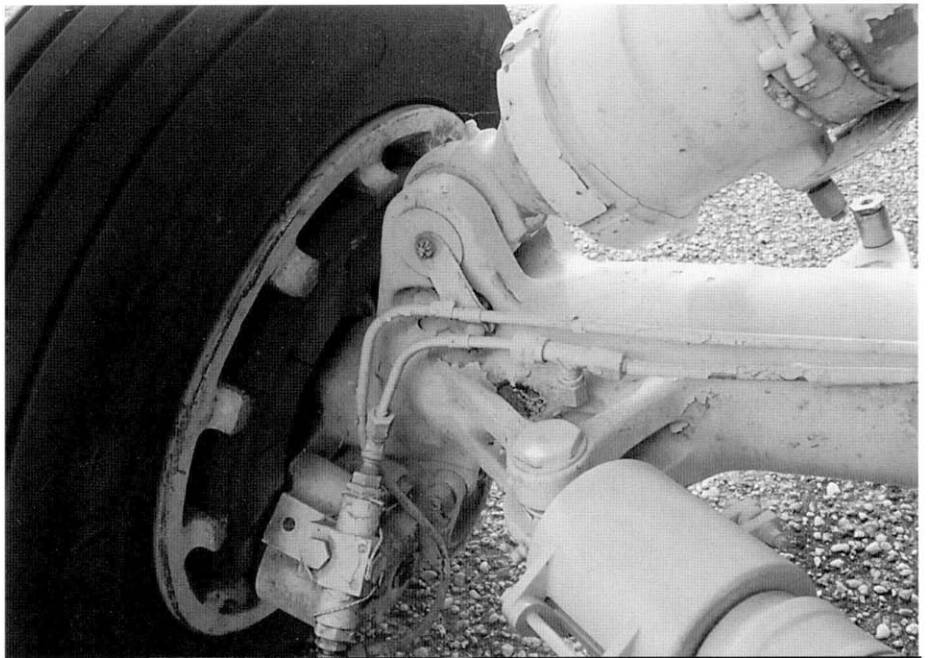


The main landing gears on F8U-1 (F-8A) and F8U-1N (F-8B) Crusaders were originally equipped with solid magnesium wheels. These were formed with corrugation ribs for added strength. The shock strut compressed upward into the shock housing. Wheels and struts were Insignia White, except for the chromed oleo (shock absorbing) inner struts. (Vought)

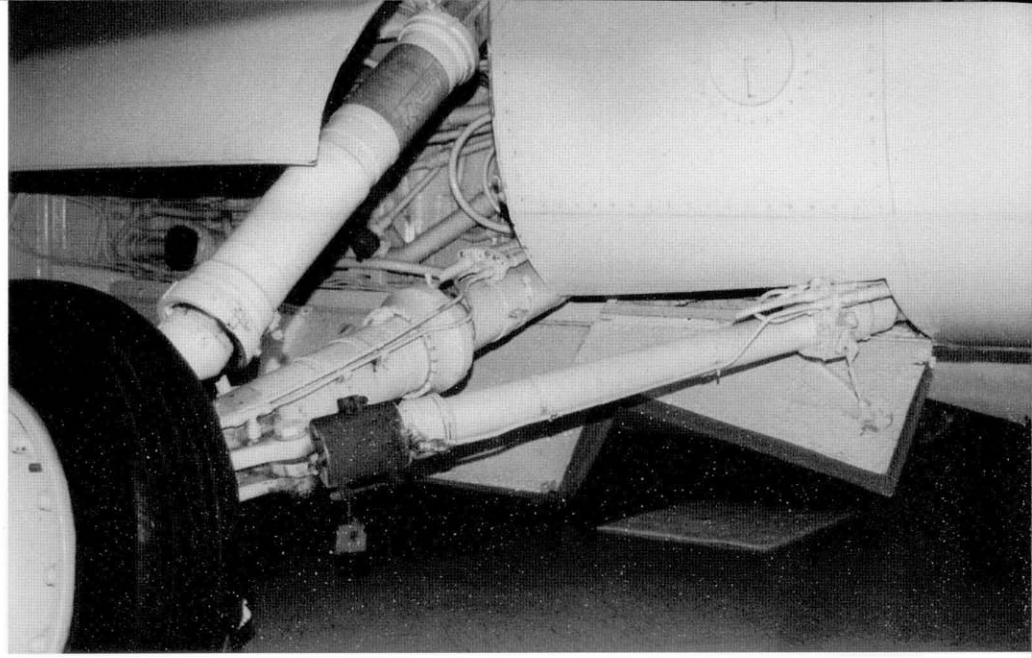


The F-8 was equipped with hydraulically actuated disc brakes. The four cylindrical brake 'puck' pads were mounted on the main tension strut's lower inner face. A tie down ring for securing the aircraft to the deck was located just aft of the brake assembly. A jack pad boss was located just above this tie down ring. (Nick)

The landing gear shock strut and actuator cylinder were connected to the main tension strut's outer end. Hydraulic brake tubing ran along the main tension strut. This was because the strut's length would not vary as the gear was compressed or extended, unlike the shock strut and actuating cylinder. (Nick)

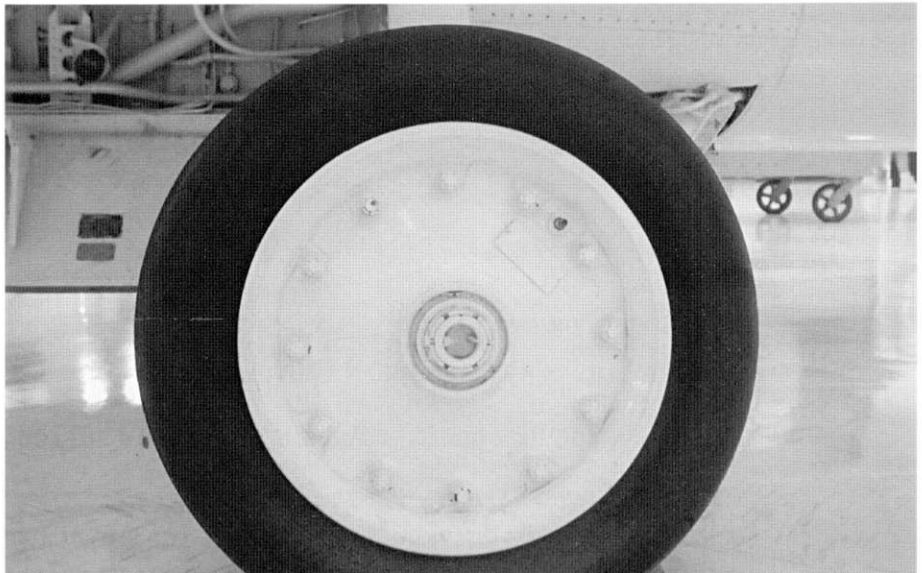


Two main landing gear doors evenly split down the gear well's length enclosed each gear well. The lower enclosure door was connected to the landing gear torque tube via a bell crank arm. This door opened and closed proportionate to the torque tube's rotation. The lower door was hinged to the fuselage keel beam. (Author)



The landing gear actuator door was mechanically linked to the landing gear extension cylinder and extended or retracted with the cylinder. Hydraulic supply and return lines connected to both rigid cylinder housing's ends provided power to the extension cylinder. (Weinel)

The later style main gear wheel was a smooth faced aluminum casting, without reinforcing ribs. Twelve bolts attached the inner and outer wheel halves. The tubeless, 16-ply tires measured 26 inches (660MM) in diameter by 6.6 inches (168MM) wide. Air for the tire came through a valve stem mounted in the wheel's outer flange. (Weinel)



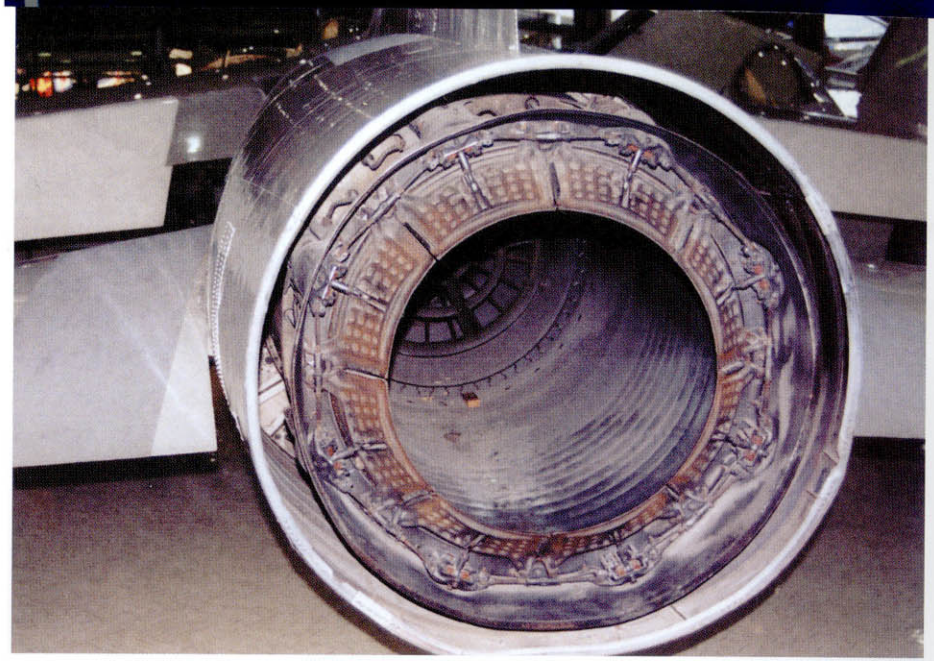
A bell crank arm connected the upper main landing gear door to the gear actuator. The hinge mechanism ran the full length of the door and was connected to the fuselage well longerons. Landing gear door edges were painted Bright Red (FS31136) on Crusaders and other US Navy aircraft. (Weinel)

Increased longitudinal control was required with the lower landing speed of F-8s equipped with the dual droop wing. This was obtained by increasing the Unit Horizontal Tail (UHT) surfaces' area. Structural reinforcement was added to the rudder and leading edge hinges on high hour airframes. The rectangular wing fuel dump vent was located just ahead of the wing tip formation light on each wing's undersurface. (Trombecky)

Installing a cuff over the existing UHT's leading edge increased its area. This effectively moved the leading edge 4 inches (10.2 cm) forward at the inboard end of the surface and faired it in with the exiting tip casting's leading edge. The dual droops are extended on this F-8J Crusader's right wing. (Trombecky)

In February of 1966, Naval Air Systems Command (NAVAIR) authorized Vought to upgrade 395 F-8s of all variants. This was intended to extend their service life into the mid-1970s and improve both the weapons system and load carrying capabilities. Several F-8Es and F-8Cs from (front to back) Naval Air Test Center (NATC) Patuxent River, Maryland, VF-191, VF-111, VF-191, and VF-194 were at Vought's Dallas, Texas factory prior to remanufacturing. (Vought)

The Crusader remanufacturing program resulted in the F-8E becoming the F-8J, the F-8D modified to the F-8H, the F-8C to the F-8K, and the F-8B to the F-8L. All remanufactured aircraft had their old wings and engines removed, and the fuselages were separated for Inspection and Repair As Necessary (IRAN). The fuselage halves were marked with identifiers, such as this example. F5 stands for fuselage 5, so that the proper fore and aft fuselage components would be mated after remanufacture. (Vought)

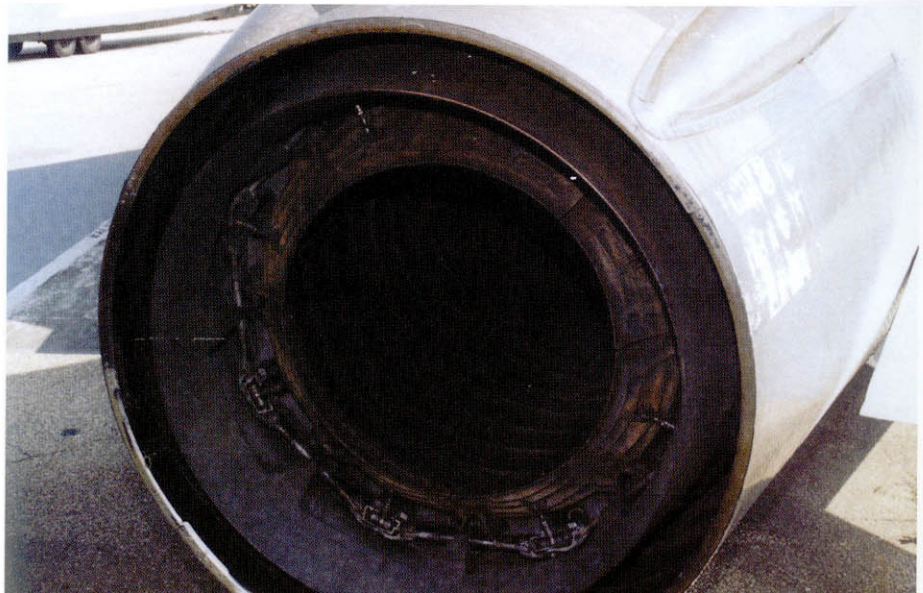


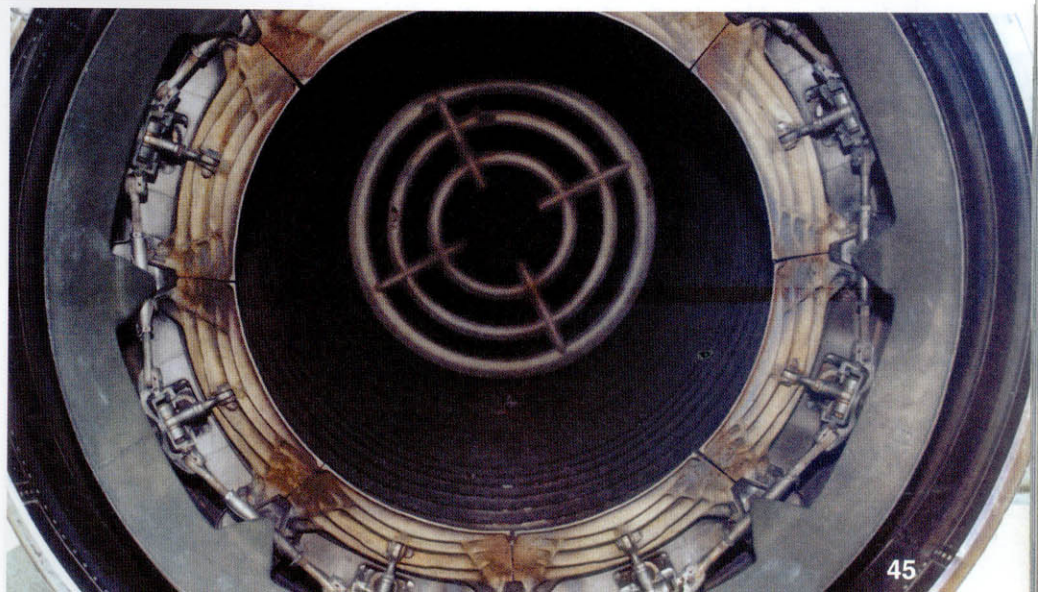
Early J57 engines through the F-8A/B's J57-P-4 employed a convergent/divergent nozzle. This nozzle was aft of the afterburner section and consisted of eight individual nozzle flaps. The flaps were cast titanium plates with square 'waffle' pattern reinforcing ribs. (Nick)

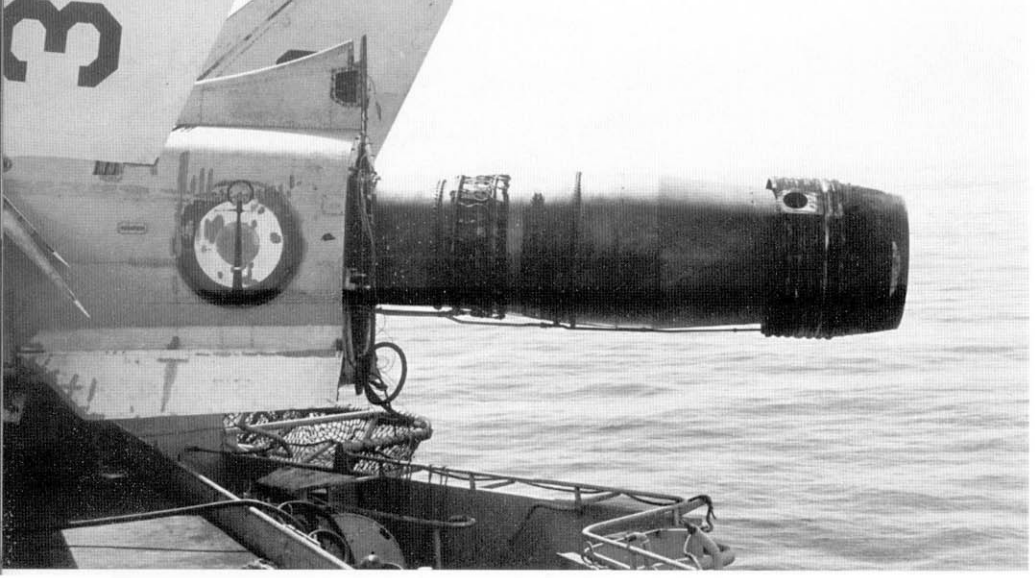
Later J57-P-16 through -P20 engines used on the F8U-2 (F-8D) and later variants also had eight nozzle flaps; however, they had only longitudinal reinforcing ribs. Another characteristic of the new, more powerful J57 variants was the higher afterburner tail pipe exhaust temperature. This resulted in a thicker, triangular section tail pipe ring. (Nick)

Fuel for the afterburner was sent to the fuel manifold located in the number 3 afterburner case. The J57 engine was equipped with a Nozzle Closed Light-off (NCL) system to improve light-off characteristics at high altitude. The NCL also prevented momentary loss of thrust during afterburner light-off. (Dann)

The exhaust nozzle area was automatically increased for afterburner operation. Eight flap actuator cylinders mounted in the fuselage tail cone adjusted the nozzle area. These were mechanically linked to the exhaust nozzle flaps and held the flaps open during afterburner operation. (Nick)





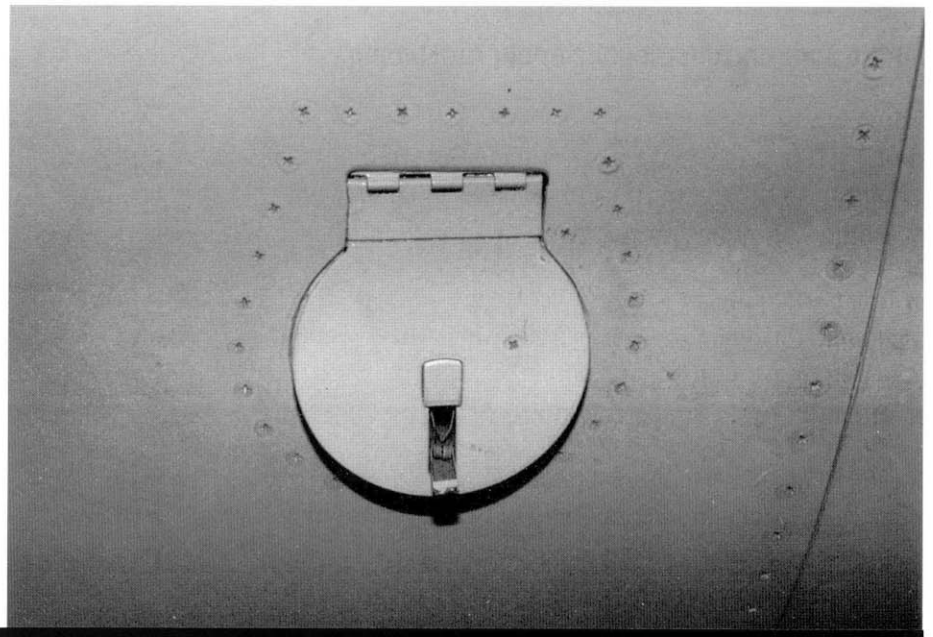


A common practice in 1950s and 1960s jet aircraft design was a detachable aft fuselage and tail section. This approach was used in the Crusader and provided easy access for maintenance and engine change out. The F-8's fuselage was split at station 595 to provide engine access. (Gall)

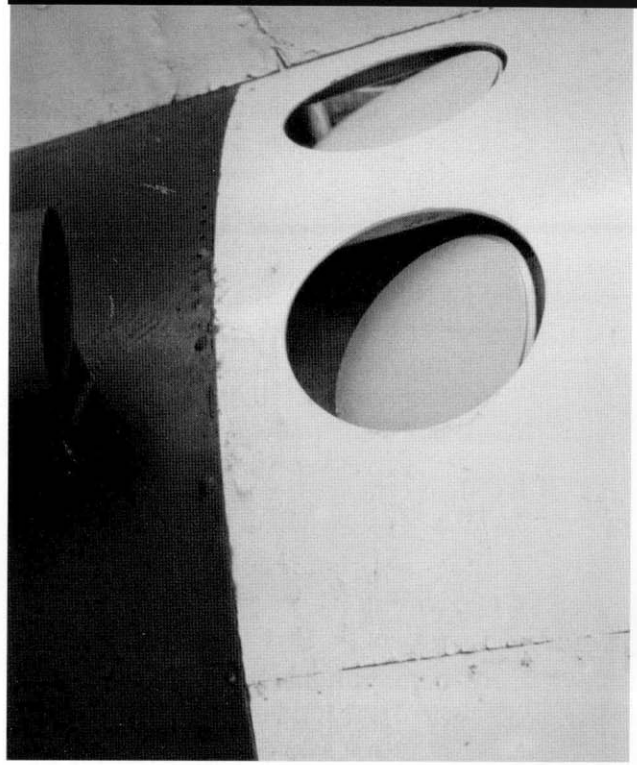
Two engine compartment cooling vents were located on the right fuselage just forward the aft fuselage separation line at fuselage station 595. These vents were not on the left fuselage side. The aft section removal access door was the square panel at the top of the letter 'V.' (Dann)

The F-8J Electronic Countermeasures (ECM) detector was housed in a 'football' shaped fairing immediately above the rudder. This housing also contained a navigation/formation light. F-8E/Js were equipped with the integral engine starter probe connections located just aft of the left main landing gear. The starter probe access door had three spring tab locks and was hinged at the 10 o'clock position. (Matsuzaki)

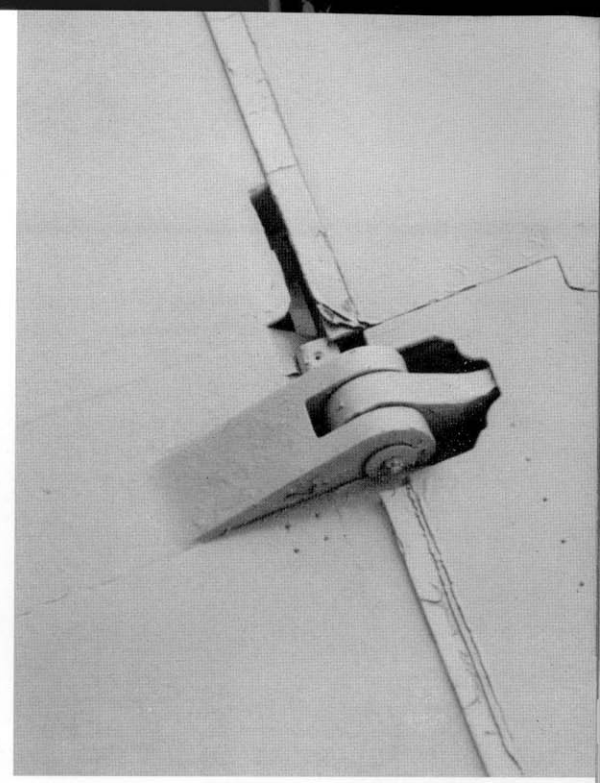
The engine starter access door was located just aft of the left main landing gear. Early Crusaders – up to the F8U-2 (F-8C) – required inserting an external starter probe into the fuselage to start the J57 engine. Later and remanufactured Crusaders had this probe mounted in the airframe. (Nick)



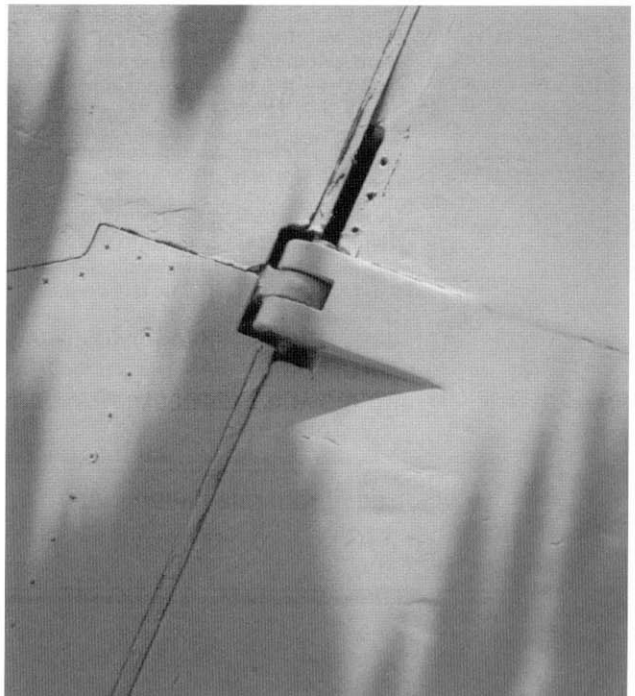
All F-8s were equipped with four circular spring-loaded engine compartment cooling vents – two on each side. These vents were located just forward of the titanium tail cone near the rudder's base. The vents were spring-loaded closed and opened by negative engine bay pressure generated while at low power settings. (Author)



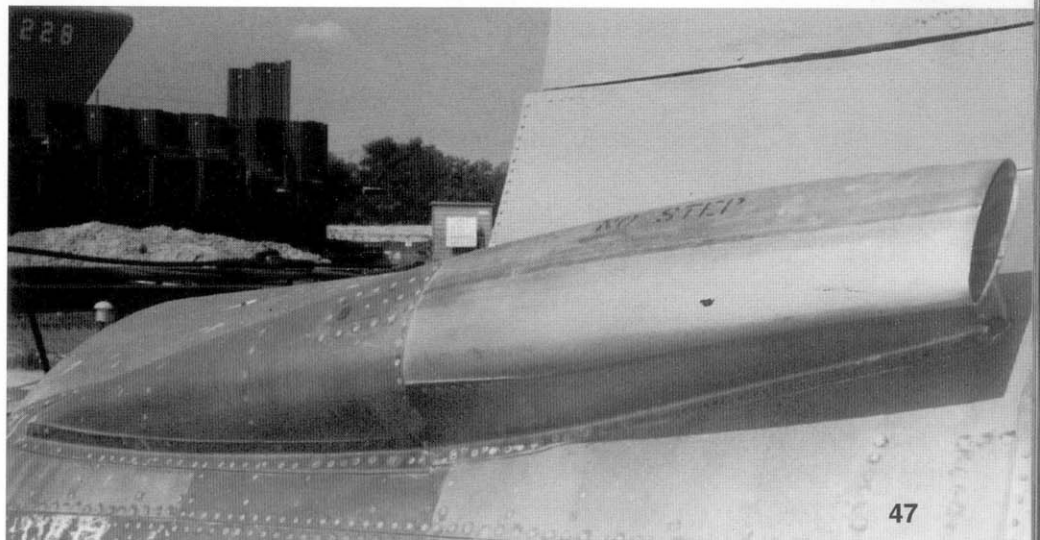
The right side rudder hinge was located at vertical tail station 181 and connected to the rudder control main spar. Elongated slots in the vertical stabilizer's right side opening accommodated rudder movement. The connecting clevis fitting's centerline was offset to the right of center for interfacing with the actuator mount. (Author)



The left side rudder main hinge differed slightly from the right side. The vertical stabilizer's opening was smaller due to the actuator connection's location. A flexible seal in the vertical stabilizer's trailing edge reduced buffeting at the fin-to-ruder interface. (Author)



F8U-2s (F-8Cs) and subsequent variants had two large afterburner cooling scoops mounted on the aft fuselage tail cone. One scoop was mounted on each side just below the two circular vents. These scoops directed cooling ram air to the exhaust nozzle and aft fuselage engine bay. These scoops and the tail cone were usually left in natural titanium, as intense engine heat would burn paint off these surfaces in time. (Dann)



(Above Left) In 1962, the *Aéronautique Navale* (*Aéronavale*; French Naval Aviation) purchased 42 Crusaders to replace aging Sud-Est Aquilon (license-built de Havilland Sea Venom) fighters. This F-8D (1/BuNo 147037) was the F-8E (FN) prototype and first flew on 27 February 1964. France's Crusader variant was designated the F-8E (FN), with the FN standing for the French Navy. French Crusaders were originally finished in the standard US Navy scheme of Light Gull Gray (FS36440) upper surfaces and Insignia White (FS17875) lower and control surfaces. Red markings appear on the nose, wings, and tail of this test aircraft. Data stencils were in English. (Vought)

(Above) Operational requirements of the smaller French carriers dictated several changes to the F-8E to reduce approach and landing speeds. A double leading edge droop and a Boundary Layer Control System (BLCS) were incorporated towards this end. The Unit Horizontal Tail (UHT) area was increased. Additionally, the electrical system was reworked and Matra R.530 Air-to-Air Missile (AAM) capability was incorporated. This F-8E (FN) (4) is in the second French scheme of overall Light Gull Gray. MARINE (French for NAVY) is Flat Black on the aft fuselage. (Vought)

(Left) The third F-8E (FN) scheme was an overall Dark Blue-Gray (approximately FS35164), which was similar to the British PRU Blue of World War Two. Markings were in Light Gull Gray, while data stencils were now in French. The 42 French Crusaders were assigned to *Flotilles* (Squadrons) 12F and 14F at Landivisiau, France. These Squadrons deployed aboard the aircraft carriers CLEMENCEAU (R-98) and FOCH (R-99). (JEM)

The *Aéronavale* authorized the final upgrade program for its 17 remaining F-8E (FN)s in 1989. Between 1990 and 1997, one Crusader completed the *Prolongué* (Prolonged) modifications every 18 months. These modifications included a complete wiring replacement, installing an improved Instrument Landing System (ILS), adding the Mode 4 Identification Friend or Foe (IFF) system, a new Inertial Navigation system (INS), and integrating the SHERLOC Radar Warning Receiver (RWR). The Martin-Baker Mk-F7 ejection seat replaced the Mk-F5A from July of 1994. These Crusaders were re-designated F-8E (FN) Ps. (Gall)

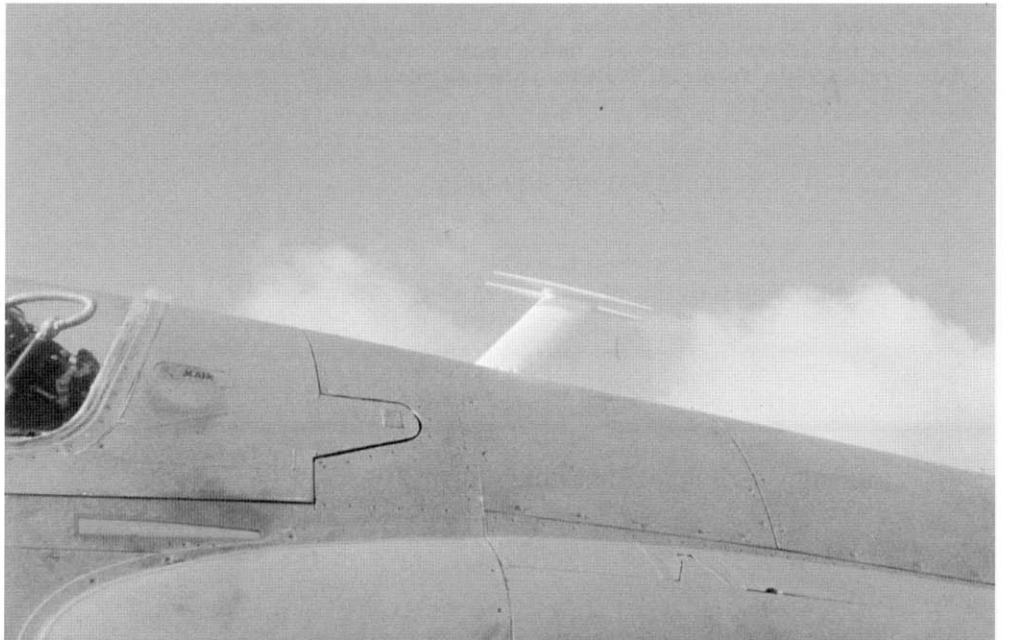
This F-8E (FN) P (34) completed the *Prolongué* upgrade program in April of 1993. Although the French Crusaders received many upgrades, they maintained the early style landing gear throughout their career. The external differences include the SHERLOC RWR antenna on the vertical fin, the Radome Tan (FS33613) IFF antenna on the upper mid-fuselage, the White 'H' style antenna aft of the cockpit, and the Yellow UHF antenna under the nose. A Blue Matra 550 Magic training missile is mounted on the right 'cheek' pylon. (JEM)

The F-8E (FN) P cockpit differed slightly from the original *Aéronavale* aircraft. The main differences were adding the SHERLOC RWR screen left of the AN/APG-104 radar scope and the improved ILS display. After July of 1994, the 'P' also received the Martin-Baker Mk-F7 ejection seat with a French survival pack. This seat replaced the Martin-Baker Mk-F5A seat originally installed on French Crusaders. (French Navy)

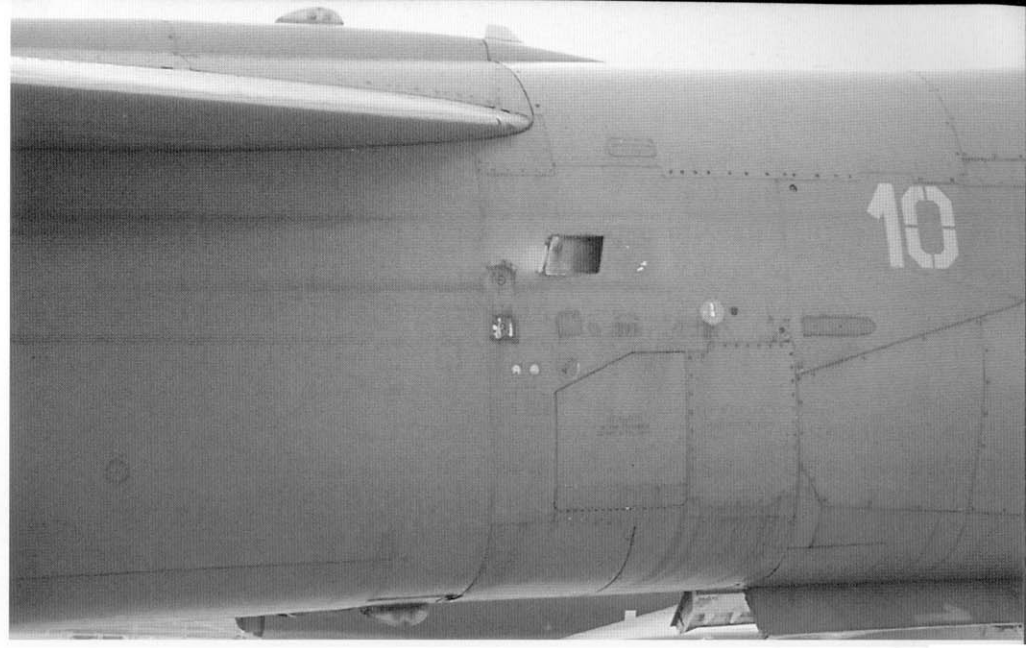
The original French Crusader's cockpit layout was basically identical to the US F-8E, except for the added BLCS controls. The F-8E (FN) had a 5-inch (12.7 CM) tall screen for the Magnavox AN/APQ-104 radar. Removal of the ejection seat exposed the intake trunk roof that formed the cockpit floor. All Crusaders had the foot well recessed in the front cockpit, which provided additional clearance for the pilot. (Gall)

An intermediate modification to the F-8E (FN) was adding a Yellow angled Very High Frequency (VHF) radio antenna aft of the cockpit. French Crusaders had in-flight refueling capability and retained the four 20MM Colt-Browning Mk 12 cannon. (Gall)

F-8E (FN) Ps received a revised VHF antenna aft of the cockpit during the 1990s. This White antenna had an 'H' style configuration placed atop the blade mast. The canopy actuation lever is painted Orange. (Gall)



The F-8E (FN) was capable of carrying the Matra R.530 AAM, which a ground crewman is loading on this Crusader (11) using a winch fitted to the aircraft. French Crusaders carried two R.530s – one on each fuselage side. The 65 percent failure rate led the French Navy to abandon this missile in 1991. The R.530 was 11 feet 2.4 inches (3.4 M) long, 9 inches (22.9 CM) in diameter, and weighed 425 pounds (193 KG). (French Navy)



All F-8E (FN)s were equipped with the AGM-12 Bullpup Air-to-Surface Missile (ASM) instrumentation fairing atop the center wing section. The French did not deploy this ASM operationally. Two Red anti-collision beacons were mounted on the fuselage – one each on the upper and lower surfaces. A short IFF blade antenna was mounted just ahead of the upper beacon. An Orange fuselage position marker light was placed on each side in front of the wing leading edge. (Wrobel)

France's F-8E (FN)s were equipped with the 18,000-pound thrust Pratt & Whitney J57-P-20A afterburning turbojet engine. They retained the same cooling vents on the aft fuselage as the US Crusaders. Flap travel was increased from 20° on standard US F-8s to 40° on the F-8E (FN). This provided additional low speed control while operating off the small French carriers. Two Orange fuselage position marker lights – one on each side – were located on the mid-fuselage parallel to the wing's trailing edge. (Wrobel)

An overall Light Gull Gray F-8E (FN) (5) is displayed at a French air base. A Blue Matra 550 Magic Infrared (IR) AAM is mounted on the left 'cheek' pylon; operational missiles were overall White. The *Aéronavale* used the Magic in place of the AIM-9 Sidewinders that armed US F-8s. The Magic is distinguished by the two sets of canard (forward) fins just aft of the nose. This missile is 108.2 inches (275 CM) long and weighs 198 pounds (90 KG). The *Aéronavale* roundel was painted on the aft fuselage sides, upper left wing, and lower right wing. It had a Black anchor superimposed over the Blue (center), White, and Red French roundel, with a Yellow outer ring on this aircraft.

The F-8E (FN) P received the Thomson-CSF (now Thales) SHERLOC RWR, which resulted in a modified vertical stabilizer tip. The fin formation light was retained in the normal position just above the rudder. The fin cap and RAW fore and aft antennas were Flat Black (FS37038). SHERLOC stands for *Système Héliporté d'Écoute Radar et de LOCalisation* (Helicopter Radar Listening and Localization System), which was originally developed for helicopter use. (Wrobel)

All F-8E (FN)s were equipped with the larger Unit Horizontal Tail (UHT) surfaces. These provided increased longitudinal control in conjunction with the desired landing speed. The larger UHT had reinforcing plate added at the hinge connection point. The Boundary Layer Control System (BLCS) vent duct outlets are visible just ahead of the flaps' leading edges. (Wrobel)

(Above) In 1977, the *Hukbong Himpapawid ng Pilipinas* (Philippine Air Force) purchased 35 F-8Hs. These had been retired to the storage facility at Davis-Monthan AFB, Arizona. The contract required Vought to refurbish the Crusaders and train Philippine pilots and maintenance personnel. These crews came from the 7th Tactical Fighter Squadron (TFS), 5th Fighter Wing at Basa Air Base in the Philippines. (Vought)

(Above Right) Externally, the Philippine F-8Hs were configured identically as their US Navy predecessors and they retained their original US Bureau Numbers (BuNos). Deliveries began in 1978 and finished in 1979. Vought made airworthy 25 of the 35 Filipino-ordered Crusaders, while the remaining ten aircraft were used for spares replacement. (Vought)

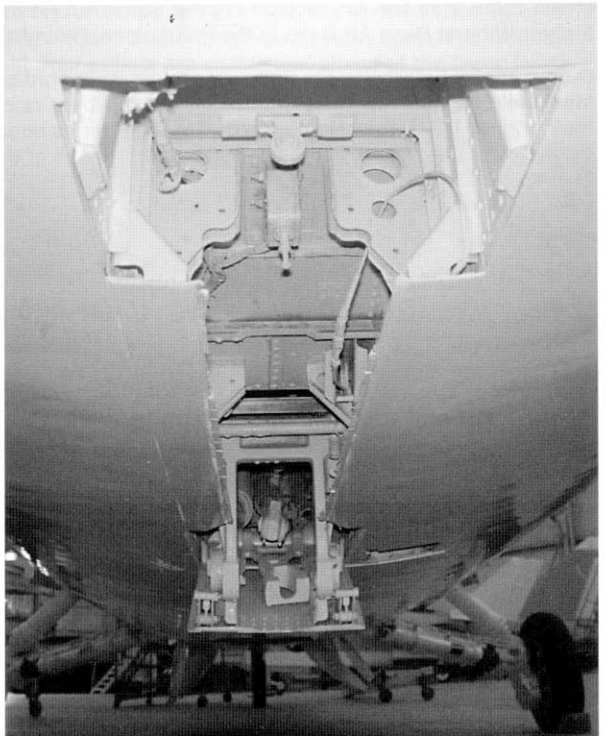
(Right) The Philippine F-8Hs were originally painted a two-tone gray scheme, with Glossy Dark Gull Gray (FS16231) upper surfaces and Glossy Light Gray (FS16440) undersurfaces. The control surfaces were painted the same color as the adjoining surface. Other markings were Flat Black (FS37038), except for the full color national insignia and the 7th TFS 'Bulldogs' insignia on the tail. Surviving Crusaders were painted in a 'wrap around' finish in 1982, but the Philippines retired their last F-8Hs from service in January of 1988. (Vought)

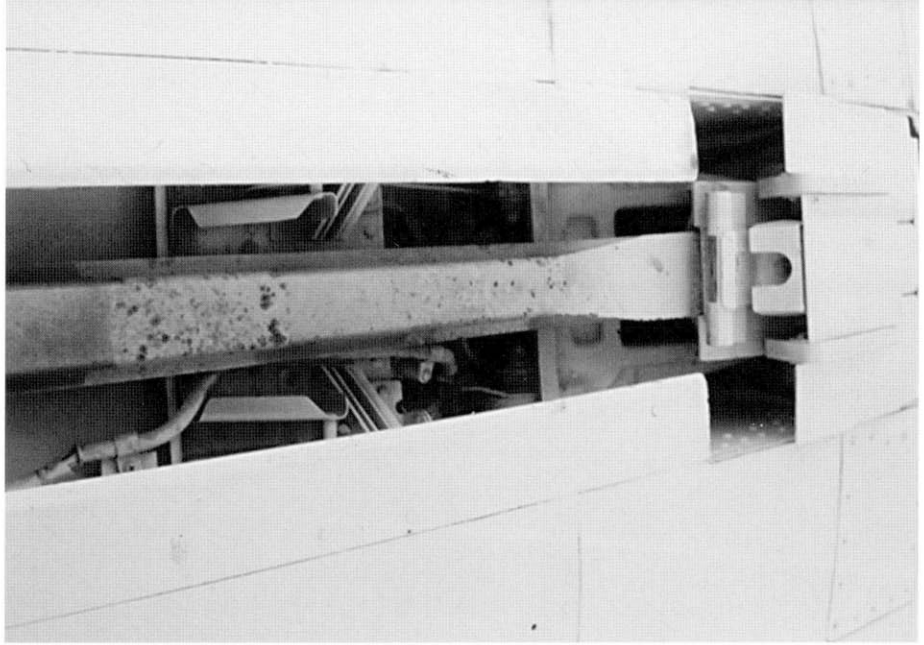
Two F-8Cs (UE-15/BuNo 146973 and UE-10/BuNo 146956) of Composite Squadron Five (VC-5) approach Naval Air Facility (NAF) Atsugi, Japan on 12 August 1966. The 16,900-pound thrust J57-P-16 engine powered this variant. The greater engine power required adding afterburner cooling scoops to the aft fuselage. Two ventral strakes added to the lower aft fuselage enhanced directional stability. (Matsuzaki)

The fuselage immediately beside the Unit Horizontal Tail (UHT) was left in bare metal to avoid scraped paint in this area. The amount and extent of service data stencil markings varied on each aircraft as a function of its service cycle. Two-inch (5.1 CM) high Black aircraft model identification letters were placed two inches above the 4-inch (10.2 CM) high Bureau Number (BuNo), also in Black. Arresting gear accumulator filling and bleeding instructions are in large lettering on the lower fuselage above the ventral strake. (Vought)

The second F8U-2N (F-8D) (2/BuNo 147036) performs a test flight from Vought's Dallas facility in 1960. This variant's J57-P-20 engine produced 1100 more pounds of thrust than the F-8C's J57-P-16. Improved radar and avionics gave the F-8D limited night fighter capabilities. It was also the first variant equipped with the Approach Power Compensator (APC) to aid in landing and the Vought 'push button' autopilot for ease of operation. (Vought)

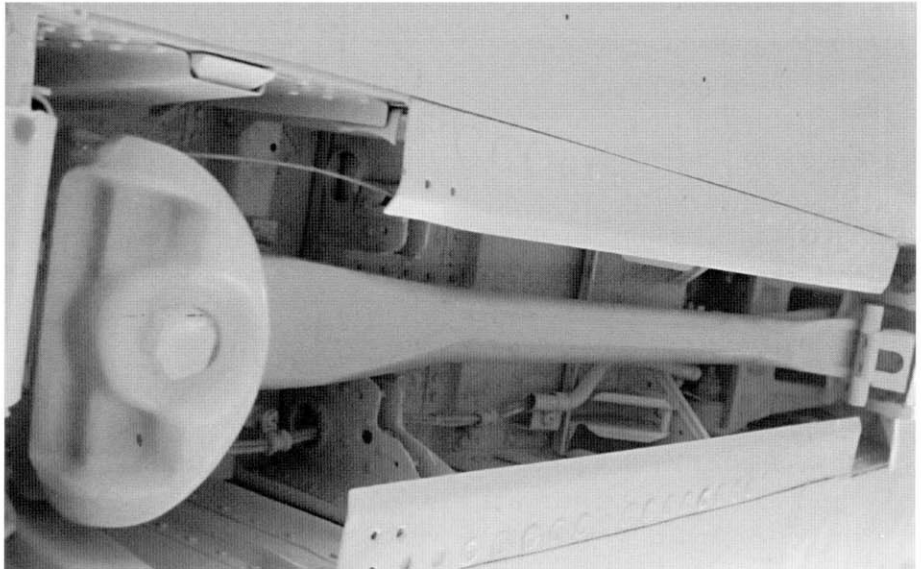
All Crusaders had the arresting (tail) hook fully enclosed within a well located in the tail section undersurface. Enlarged areas at the aft end of this well provided clearance for the hook cable point. When extended, the hook shank had 15° lateral (side-by-side) movement. The hook up micro switch was fitted to the ceiling of the well's aft end. The hook actuating cylinder's rod end and the aircraft hold back socket are visible above the linkage door. A hold back bar was placed in this socket just prior to launching the aircraft from a carrier. This bar fell away when the aircraft was launched. (Weinel)

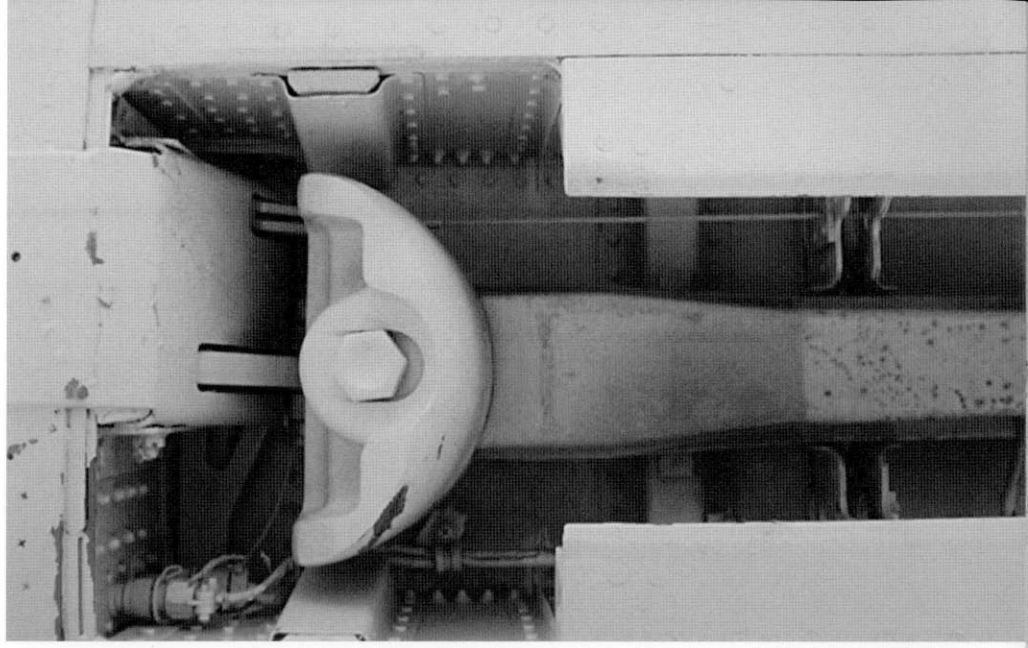




The Crusader's arresting hook was hinged at its forward end to the over center locking gear linkage. Forward of this hinge was the aircraft hold back socket. The hook shank was normally painted with 4-inch wide alternate stripes of Black and White. (Weinel)

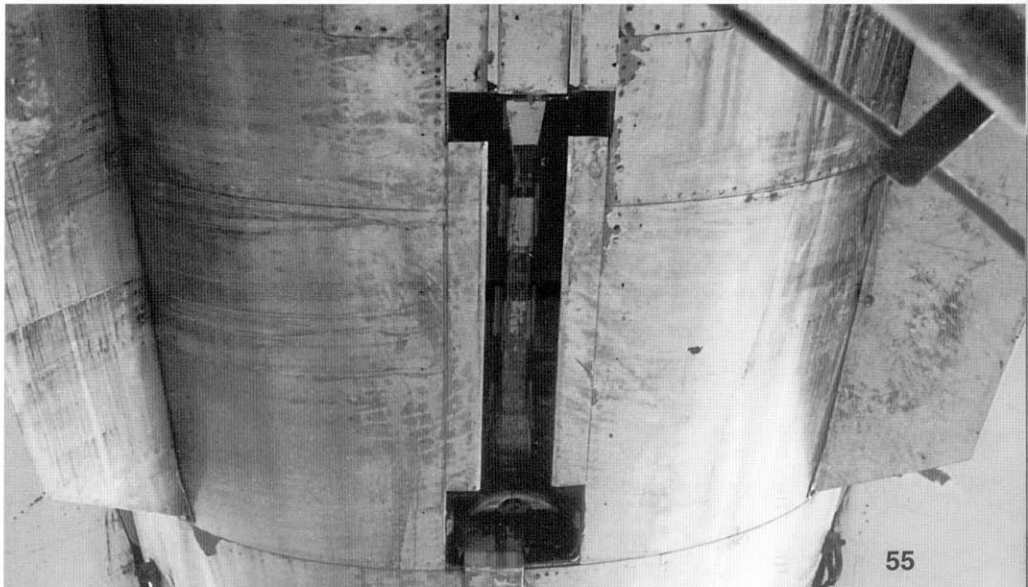
An improved hook shank with a circular cross section was installed on remanufactured US F-8H/J/K and RF-8G Crusaders. This circular shank had improved fatigue life and was less subject to damage. The new shank retained the single bolt point attachment method. This hook assembly was fresh from the paint shop and had not yet been painted with the standard 4-inch wide alternating Black and White stripes. (Weinel)





The original arresting hook shank fitted to Crusader variants through the F-8E consisted of a square cross section with a top flange plate. A replaceable hook point was attached to the aft end by a single bolt. A mechanical up lock mechanism mounted to the rear well bulkhead held the hook in place if hydraulic pressure was lost. (Weinel)

The arresting hook was hydraulically retracted and extended from power supplied by a fuselage-mounted accumulator. Hydraulic pressure normally held the hook in the retracted position. The mechanical up lock held it in place if hydraulic pressure was lost. This hook had 40° lateral movement to either left or right when it was extended. (Gall)



While F8U-1 fighter production began, Vought initiated design proposal V-392 for a Crusader photo reconnaissance variant. The 32nd F8U-1 (BuNo 141363) was reconfigured as the XF8U-1P test platform. (The P suffix stood for photographic.) The reconnaissance Crusader was basically the same as the fighter from aft of the leading edge. The F8U-1P made its initial flight on 17 December 1956. (Vought)

The F8U-1P (RF-8A) nose and forward fuselage were redesigned to remove the guns, rocket rails, and the associated fire control systems. All armament was replaced by four camera stations, photo flare pods, and the necessary control systems. The inlet duct bypass door was located immediately aft of the left fuselage national insignia. (Vought)

The F8U-1P (RF-8A from 18 September 1962) had squared-off fuselage sides, which provided flat surfaces for the electrically heated optical glass panels. These panels were required to yield the optimum photo quality. The flat sides were blended into the upper fuselage and curved intake air duct. Camera station 2L (2 Left) was located on the forward left fuselage. Station 3 was placed aft of 2L on the lower left fuselage. Red covers are placed over the camera windows for this test flight. (Vought)

Camera station 2 was common to both fuselage sides. Station 2R (2 Right) was forward, while station 4 was located aft on the right lower fuselage side. The Emergency Power Pack (EPP) was located between stations 2R and 4 and operated in the same manner as on F-8 fighters. (Dann)

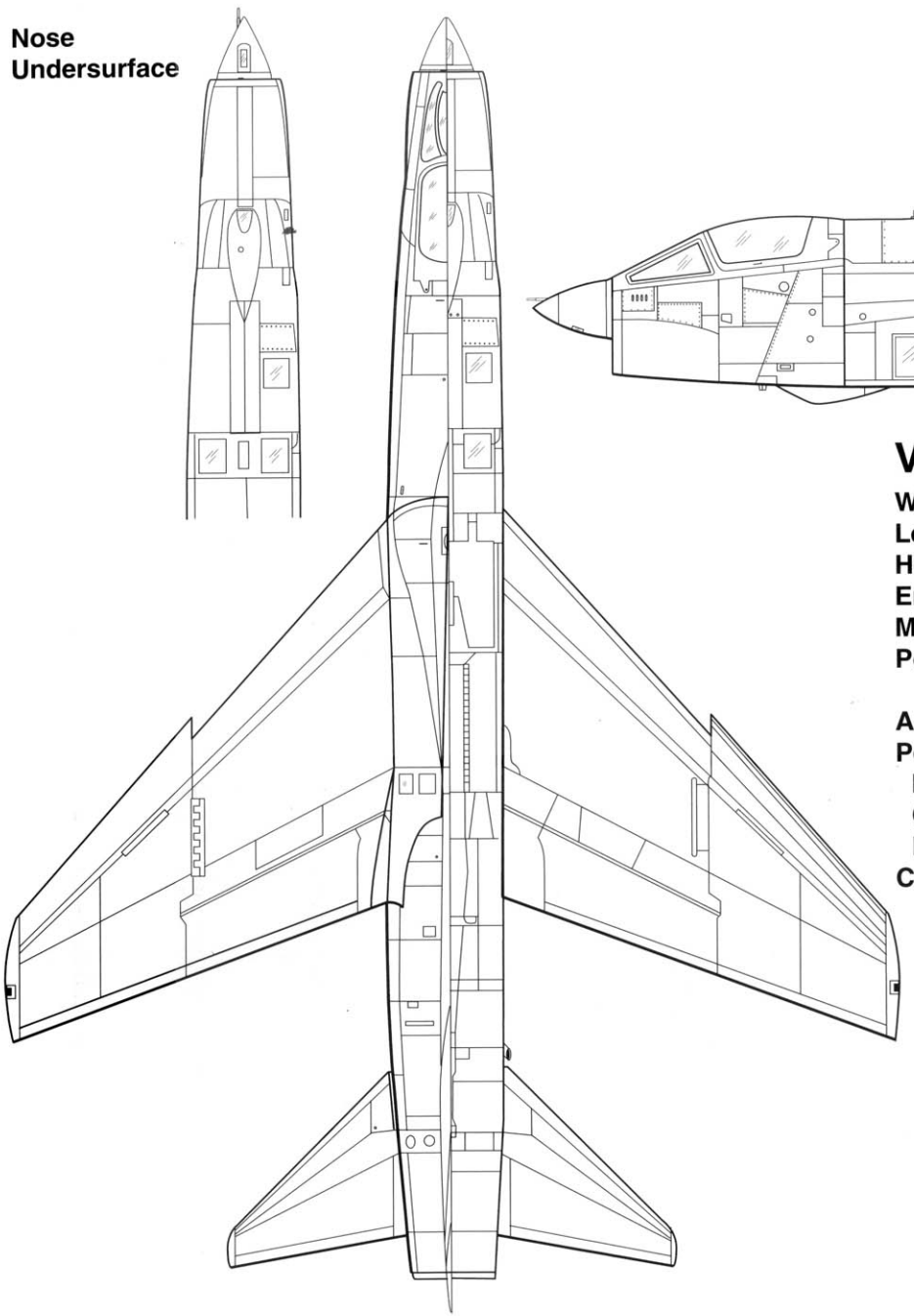
Vought began to remanufacture 73 RF-8As to RF-8G standard in 1965. This remanufacturing program was performed in two blocks. The first block of 54 RF-8As was rebuilt from 1965 to 1967 and the second block from 1968 to 1970. The RF-8G was fitted with a new high fatigue wing that included hard point capability for carrying wing stores and fuel tanks. This RF-8G (AF-632/BuNo 145647) was assigned to Light Photographic Squadron Two Hundred Six (VFP-206) at NAF Washington, DC. (Alexander)

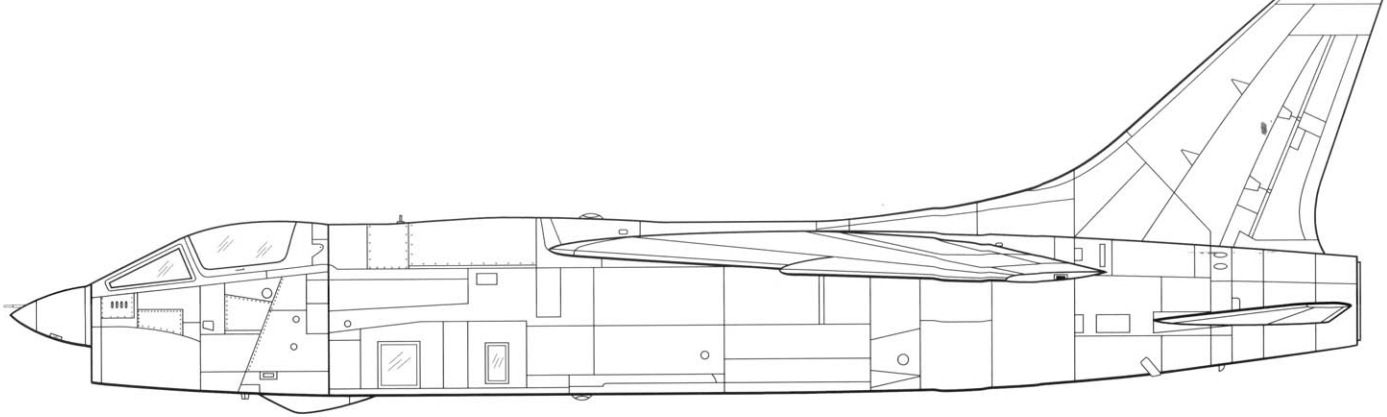
The RF-8G's increased electrical power also made it possible to add improved camera configurations to all stations. The first block aircraft retained their original landing gears, but received the second block's upgraded gears during Inspection and Repair As Necessary (IRAN) operations. All remanufactured RF-8s replaced the Vought ejection seat with the Martin-Baker Mk-F5A seat. (Alexander)

The RF-8G was also refitted with the more powerful 18,000-pound thrust Pratt & Whitney J57-P-20 afterburning turbojet engine. Increased speeds from this more powerful engine resulted in the added ventral fins, which provided the required directional stability. The J57-P-20 was equipped with a larger 20 kilovolt-ampere (kVA) generator. Additional electrical power allowed for enhanced Electronic Countermeasures (ECM) systems to be installed in the vertical tail. (JEM)

On 16 July 1957, Marine Major John H. Glenn set a transcontinental speed record while flying the third production F8U-1P (BuNo 144608) on Project BULLET. Glenn flew the 2446 miles (3936 KM) from NAS Los Alamitos, California to NAF Floyd Bennett Field, New York in 3 hours and 23 minutes. The future astronaut and US Senator averaged 725.25 MPH (1167 KMH) – Mach 1.1 – on this coast-to-coast flight, during which his cameras photographed the entire route. This Crusader was remanufactured to RF-8G standard, but was lost in an operational accident in December of 1972. (Vought)

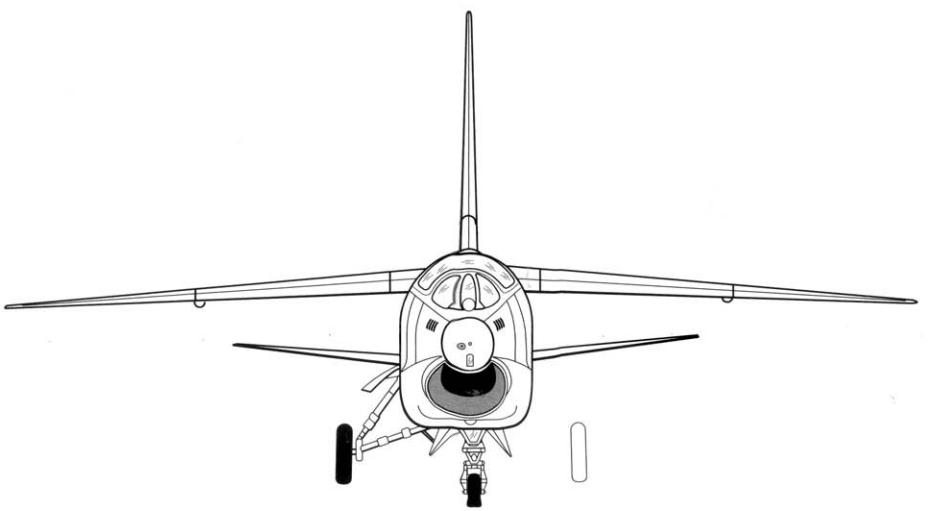
Nose
Undersurface





Vought F8U-1P (RF-8A) Crusader Specifications

Wingspan: .....35 feet 8 inches (10.9 M)
Length: .....55 feet 3 inches (16.8 M)
Height: .....15 feet 9 inches (4.8 M)
Empty Weight: .....16,796 pounds (7619 KG)
Maximum Weight: ..27,822 pounds (12,620 KG)
Powerplant: .....One 16,000-pound thrust Pratt & Whitney J57-P-4 afterburning turbojet engine
Armament: .....None
Performance:
Maximum Speed:..1076 MPH (1732 KMH) – Mach 1.6 – at 40,000 feet (12,192 M)
Ceiling: .....55,000 feet (16,764 M)
Range: .....1300 miles (2092 KM)
Crew:.....One



Major Glenn's F8U-1P flies beside a camera aircraft during Project BULLET in 1957. The area rule concept – minimizing transonic drag at zero lift – affected the F8U-1P (RF-8A) profile. The increased fuselage cross-sectional area caused by its flat sides deemed it necessary to add an upper forward fuselage 'hump.' The upper fuselage 'dipped' aft of the canopy and 'rose' again forward of the wing leading edge. (Vought)

Glenn sits in the cockpit of his Crusader prior to his 1957 transcontinental record flight. The F8U-1P (RF-8A) was originally equipped with the same Vought-designed ejection seat as on early Crusader fighters. The reconnaissance variant's canopy latching hooks and sealing mechanism were also the same as on the fighters. (Vought)

The flattened lower forward fuselage provided the optically flat surfaces required for the vertically mounted camera. The teardrop-shaped housing of camera station 1 was located just forward of the nose landing gear. The F8U-1P retained the F8U's central fuselage catapult attachment point – the slot aft of the lower camera windows – but was not equipped with the aft fuselage ventral strakes. (Vought)

Major Glenn deployed the ventral speed brake from the F8U-1P's fuselage undersurface. This brake differed in design from those in the Crusader fighters because the rocket pack was not installed in the reconnaissance variant. The F8U-1P was also equipped with a fuselage fuel vent mast on the aft lower fuselage just ahead of and below the Unit Horizontal Tail (UHT). (Vought)

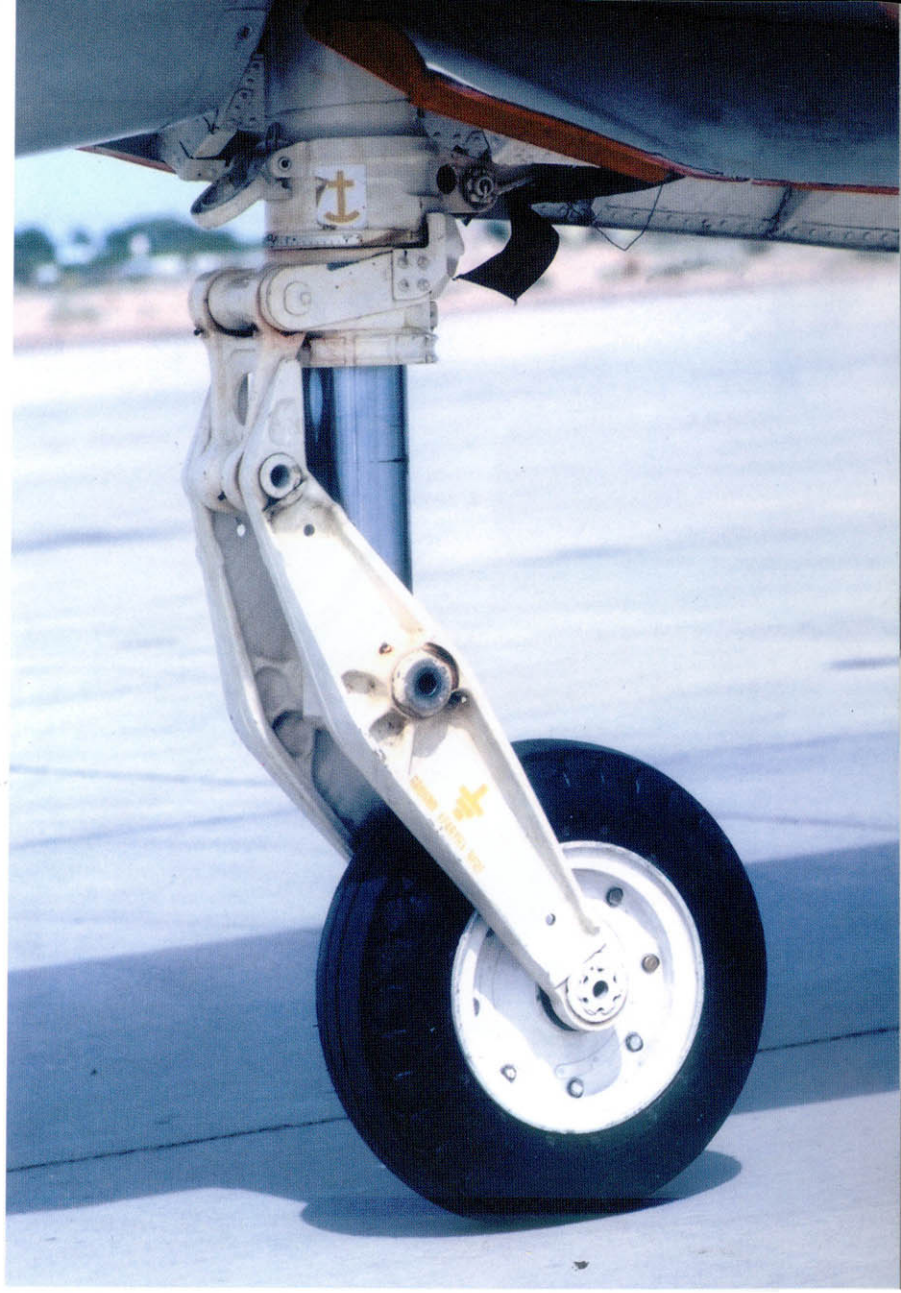
The lower air intake surface immediately in front of camera station 1 was often painted Flat Black (FS37038) to reduce glare on the camera lens. The viewfinder window was located in the nose cone at the 6 o'clock position. It provided the pilot with a view of the area being photographed by the oblique mounted camera in station 1 and the fuselage-mounted vertical cameras. (Trombecky)

Lower, middle, and upper boarding steps are extended on this RF-8G. The reconnaissance variant's canopy hinge mechanism was identical to those on Crusader fighters. The Red In-flight Refueling Probe (IRP) illumination light was installed just in front of the Altitude Identification and Measuring System (AIMS) pitot tube, which was located just below the left windshield quarterlight. (Trombecky)

The lower step was located on the forward lower fuselage, just below the word STEP. The middle step was directly above this step. An external power receptacle was mounted on the fuselage undersurface to the left of camera station 1. A Black and White placard on the fuselage side gave external power information to maintenance crews. The AN/ARA-63 Automatic Direction Finder (ADF) blade antenna was placed in front of the camera housing. (Nick)

Mounts for either KB-10 or KA-15 series oblique cameras are seen through camera station 1's forward window. These cameras were mounted at a forward oblique depression angle of either 10°, 15°, or 25°, which was not adjustable in flight. This camera station was only utilized for day missions. (Author)

'Skid horns' were mounted on the front upper section of the RF-8's nose landing gear strut. These kept arresting cables ('wires') from entangling the nose gear during carrier recoveries. The Crusader tended to flex its nose gear down when landing and snag a cable, which damaged the nose gear. The 'skid horns' deflected the cables under the front tire. This RF-8G has the later reinforced nose gear, which is in its normal compressed position. A circular light monitor window is located to the gear bay's left (upper right in this photograph). This monitor converted light reflected from the terrain into a control signal to determine proper camera exposure. (Nick)

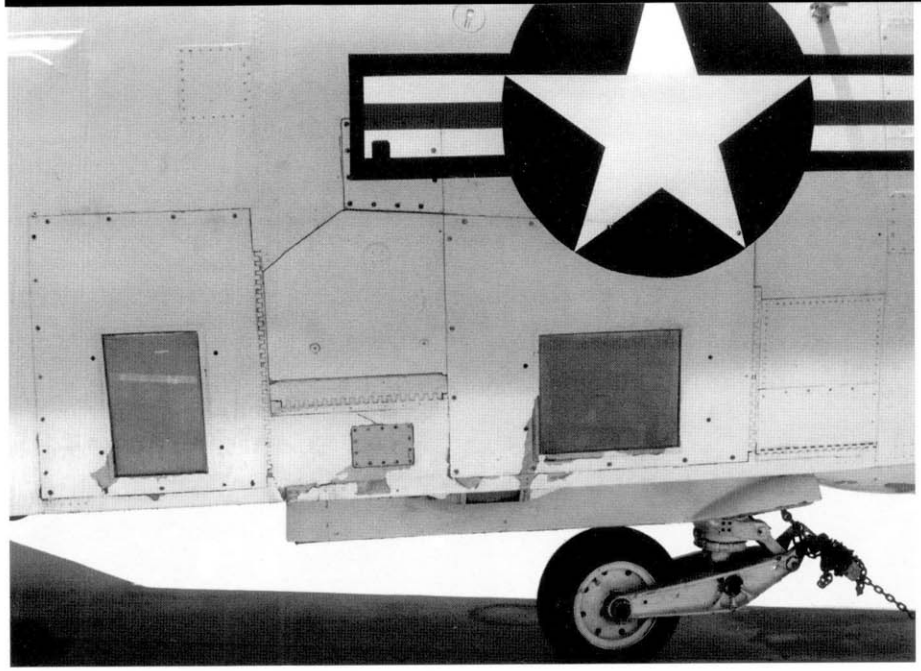


The RF-8's nose landing gear development followed the same progression as on the F-8 fighters. This RF-8G has fully extended the later style gear, which is easily identified by the 'skid horns' mounted on the front of the upper gear strut section. A Yellow anchor painted high on the strut indicated where to place a chain for securing the aircraft to the ground or carrier deck. (Trombecky)

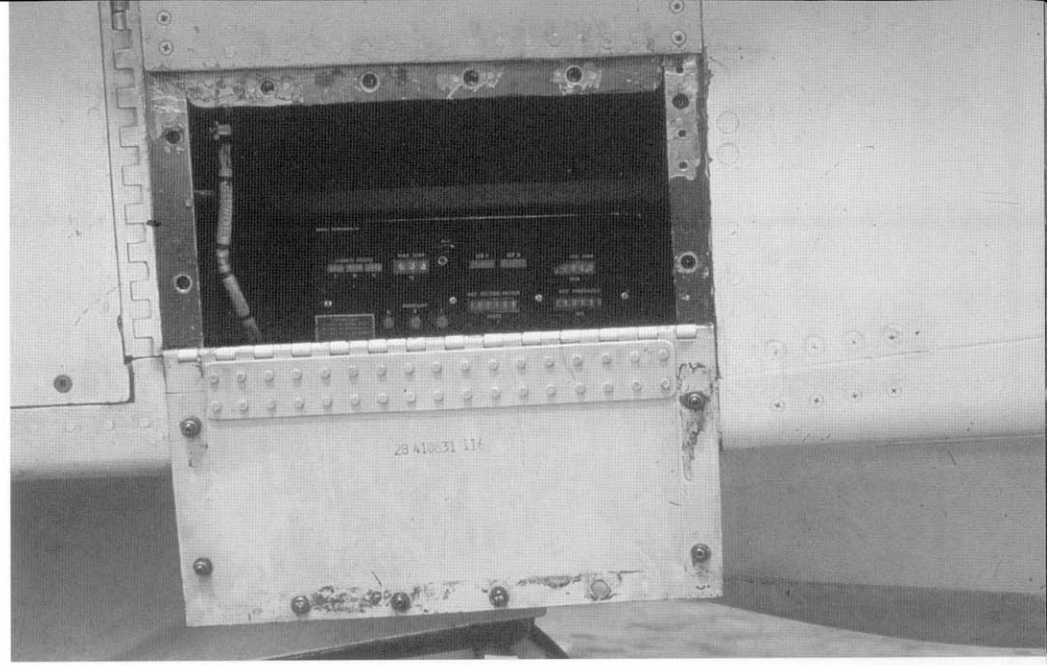
Major John Glenn's Project BULLET F8U-1P sits on the NAF Floyd Bennett Field ramp after completing its 1957 record-setting transcontinental flight. The squared off undersurface provided a flat surface for the vertically mounted cameras' optical panels. Camera station 1 was located in a teardrop-shaped fairing located on the forward fuselage, immediately in front of the nose landing gear. Early Crusader reconnaissance aircraft had the spoked-style nose wheel. (Vought)

All RF-8s had the pitot tube mounted on the nose cone just above the tip on the aircraft centerline. The pitot had a large diameter receptacle that accommodated the heated probe tip. The design differed from any used on Crusader fighters.. (Author)

The camera station 1 fairing terminated at the nose gear well's leading edge. This eliminated the need for the flipper-style forward landing gear door mounted on F-8 fighters. Contours on the nose gear doors' leading edges blended into the camera station 1 fairing. (Dann)

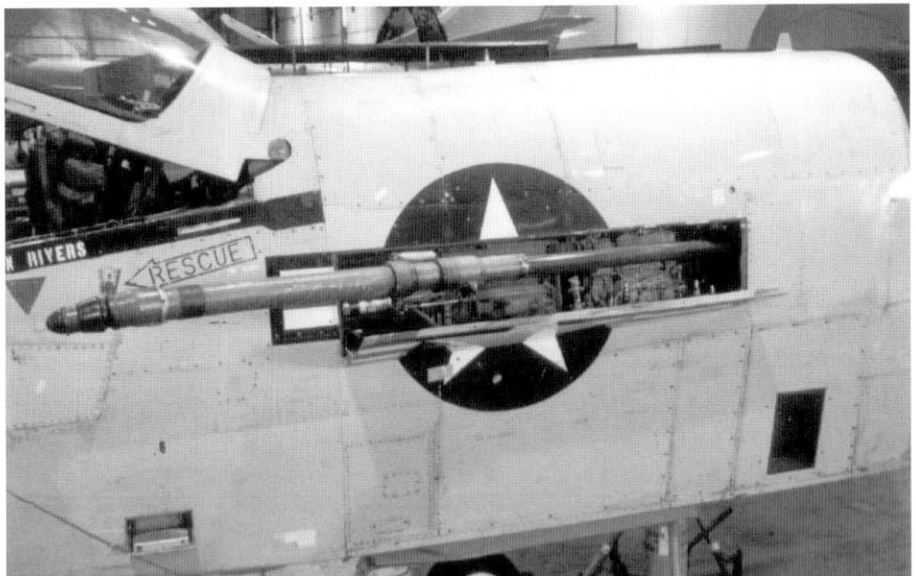


This RF-8G has the later solid nose landing gear wheel, which was incorporated during remanufacturing. Both access doors for camera stations 2 and 4 were hinged at their forward edges. These doors provided access for camera maintenance and removal. Forward of camera station 2 is the engine time/temperature recorder access hatch. (Dann)

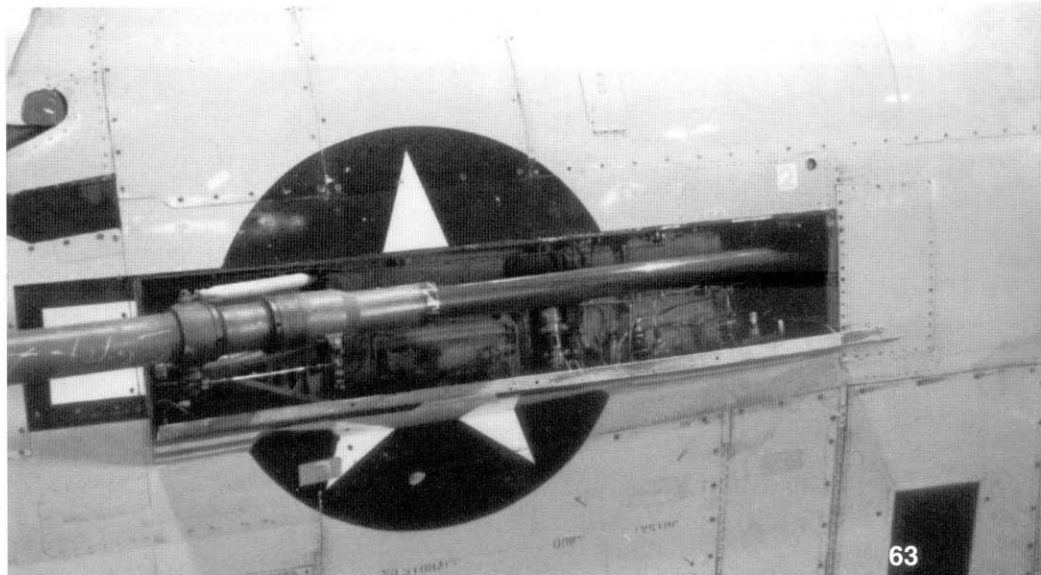


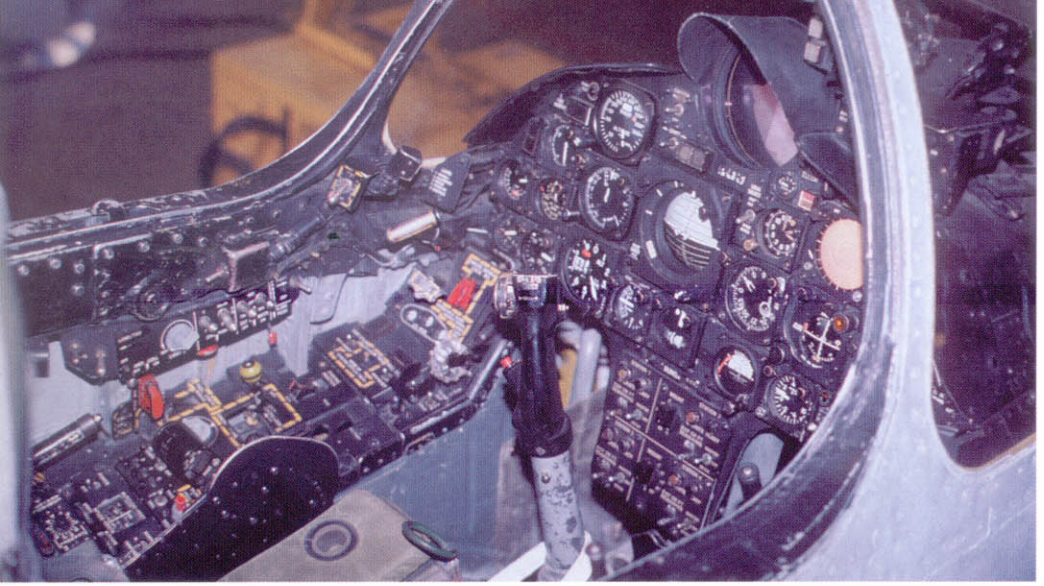
The engine time/temperature recorder was located on the right fuselage side ahead of camera station 2. This system measured and recorded exposure to elevated temperatures that could cause engine damage. The recorder was a maintenance tool for detecting excessive temperature conditions and determining engine hot section maintenance and inspection criteria. (JEM)

The RF-8's In-Flight Refueling Probe (IRP) operating mechanism was similar to those on F-8 fighters. The main difference was the RF-8's IRP door was hinged at the bottom and opened downward. This door was flush with the fuselage when closed. There was no 'hump' as on the Crusader fighters. (Detail & Scale)



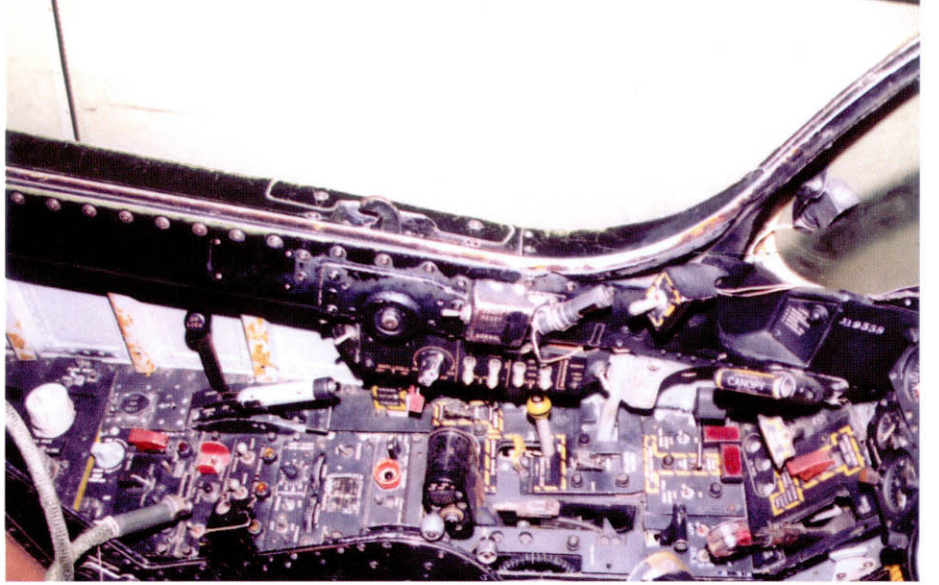
The IRP's 'A' frame support arm traveled up the fuel transfer pipe until it locked in the extended position. This arm was fastened to the probe housing's lower section and folded backward when the probe was retracted. (Detail & Scale)





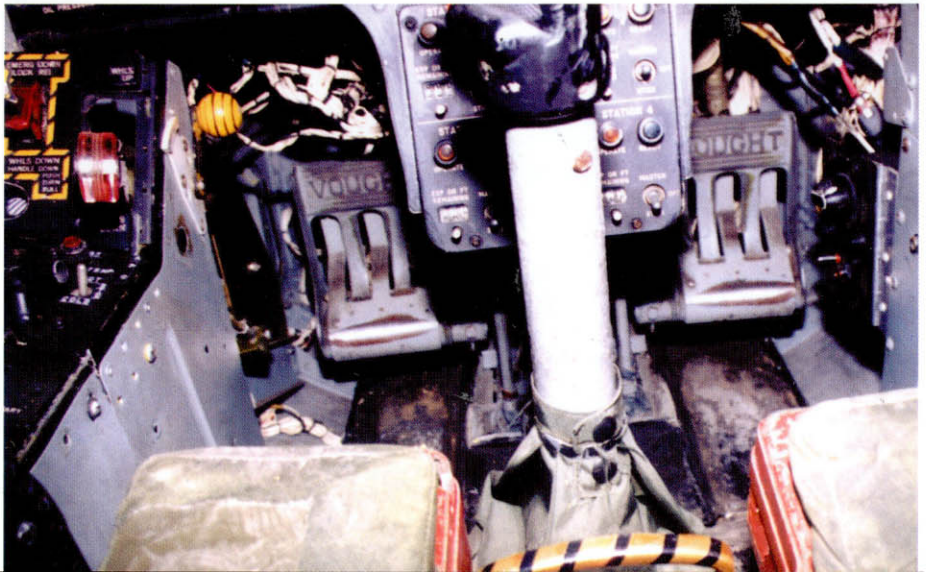
The RF-8 cockpit layout was generally the same as for the fighter variants. The main difference was the reconnaissance variant's omission of weapons system controls and the installation of camera system controls. The cockpit of this RF-8G (BuNo 146882) has the Litton AN/ALR-45 Radar Warning Receiver (RWR) control and threat indicator lights mounted on the glare shield to the viewfinder's right. (Detail & Scale)

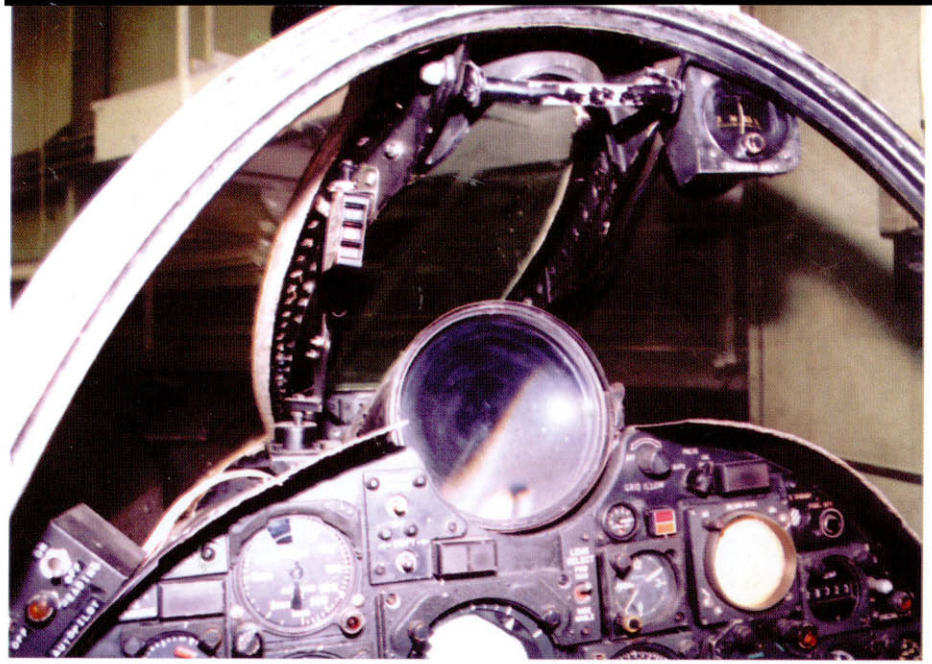
The RF-8 control stick utilized a single grip design similar to those on the F8U-1 (F-8A) through F8U-2 (F-8C). Roll and pitch trim control dials were located atop the grip. The Red trigger in front of the grip operated the camera when set in the manual control mode. The Red extra exposure button was mounted on the left side, while the nose gear steering button was on the bottom. Immediately in front of the control column was the Black adjustable position rudder pedal control knob. (Author)



The RF-8's left console was the same from the throttle quadrant forward as on F-8 fighters. Aft of the throttle was the chaff control panel, camera master control panel, AN/ALR-45 disable panel, flare release panel, and the ventilation/oxygen distribution panel. The chaff reset switch is located in front of the canopy locks hinge. The panel below it contained the Tactical Air Navigation (TACAN) select switch, camera exposure control, speech security control, and exterior light switches. (Author)

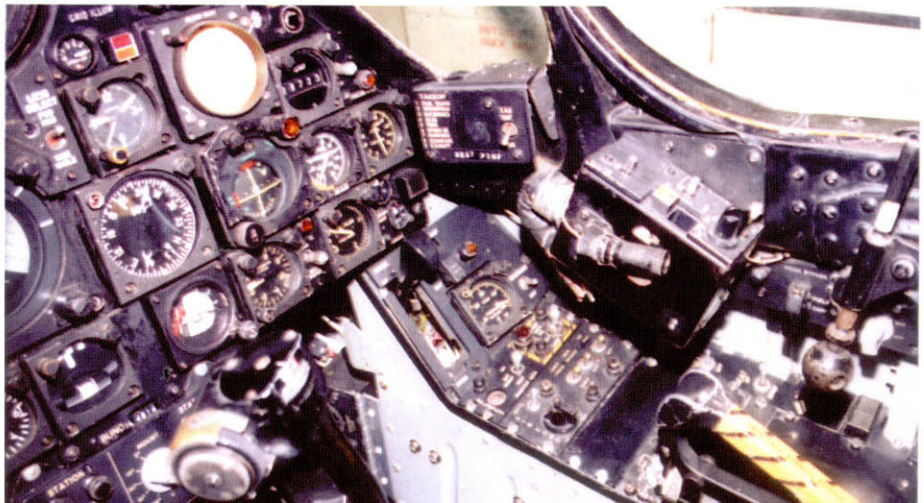
The camera station master control panel was located on the lower instrument panel section in front of the control column. All stations had a Yellow 'operates' light, Green ready light, station control switch, and a film counter. Stations 3 and 4 also had an oblique mount selector knob. Brakes were applied by pressing the tops of the rudder pedals. (Author)





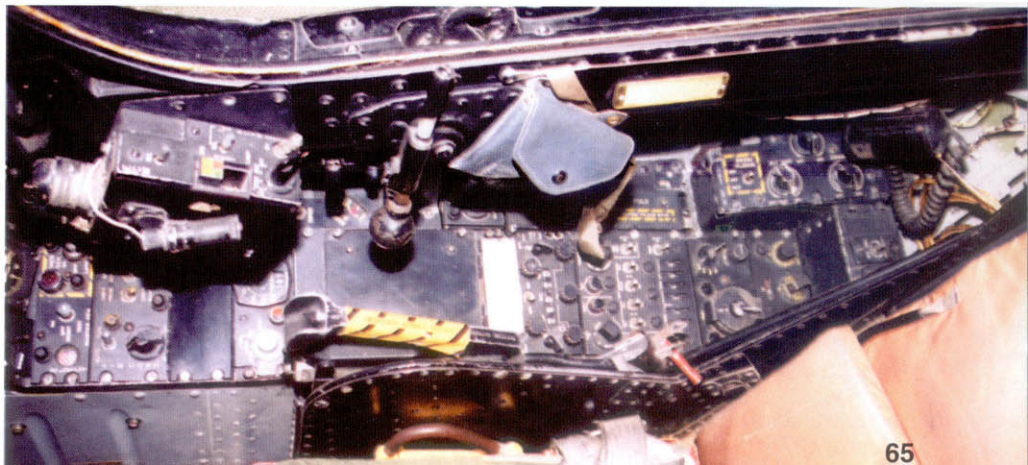
The upper windshield frame contained a cockpit access assistance handle. The standby compass was mounted to the right, while the angle of attack indexer was located to the left. The forward looking viewfinder display reticle was placed atop the instrument panel immediately in front of the pilot. The autopilot control unit was located on the left side of the instrument panel glare shield. (Author)

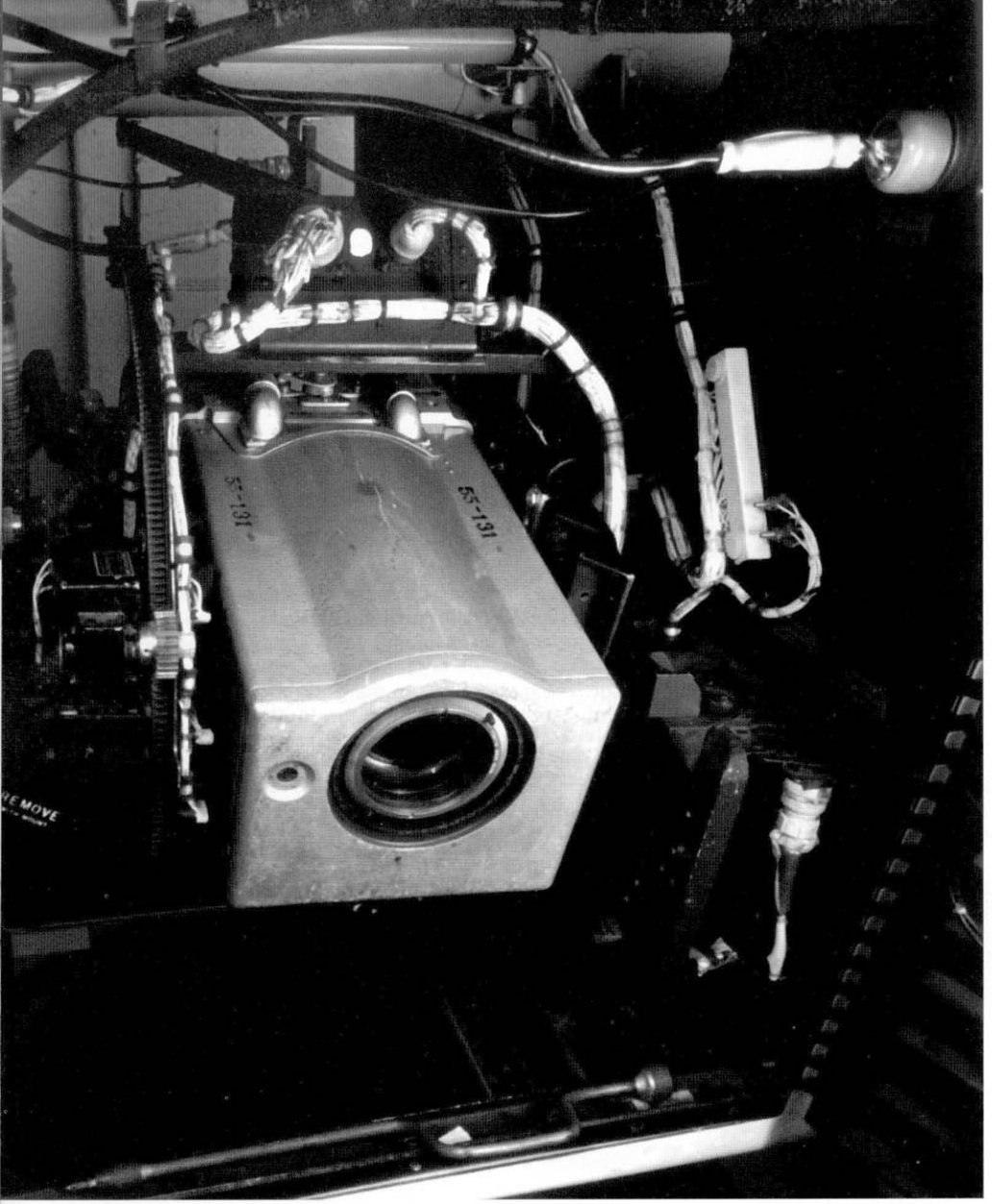
Instruments on the main panel's right side include the Orange-faced AN/ALR-45 Radar Warning Receiver (RWR) indicator. Course and acceleration indicators are located below this instrument. The next column to the right (top to bottom) includes the Ultra High Frequency (UHF) indicator, fuel quantity indicator, and fuel flow indicator. Instruments to the far right include the In-Flight Refueling Probe (IRP) switch, transfer fuel quantity indicator, and hydraulic power control panel. (Author)



The RF-8 instrument panel differed from those installed on the fighter variants. The artificial horizon indicator was moved from the center to the left. Instruments immediately to the left (from top to bottom) include the radar altimeter, airspeed indicator, and altimeter. Instruments in the next column to the left include the angle of attack indicator, tachometer, and engine pressure ratio indicator. The instruments to the right of the horizon indicator are the aircraft clock, TACAN, and standby altitude indicator. (Author)

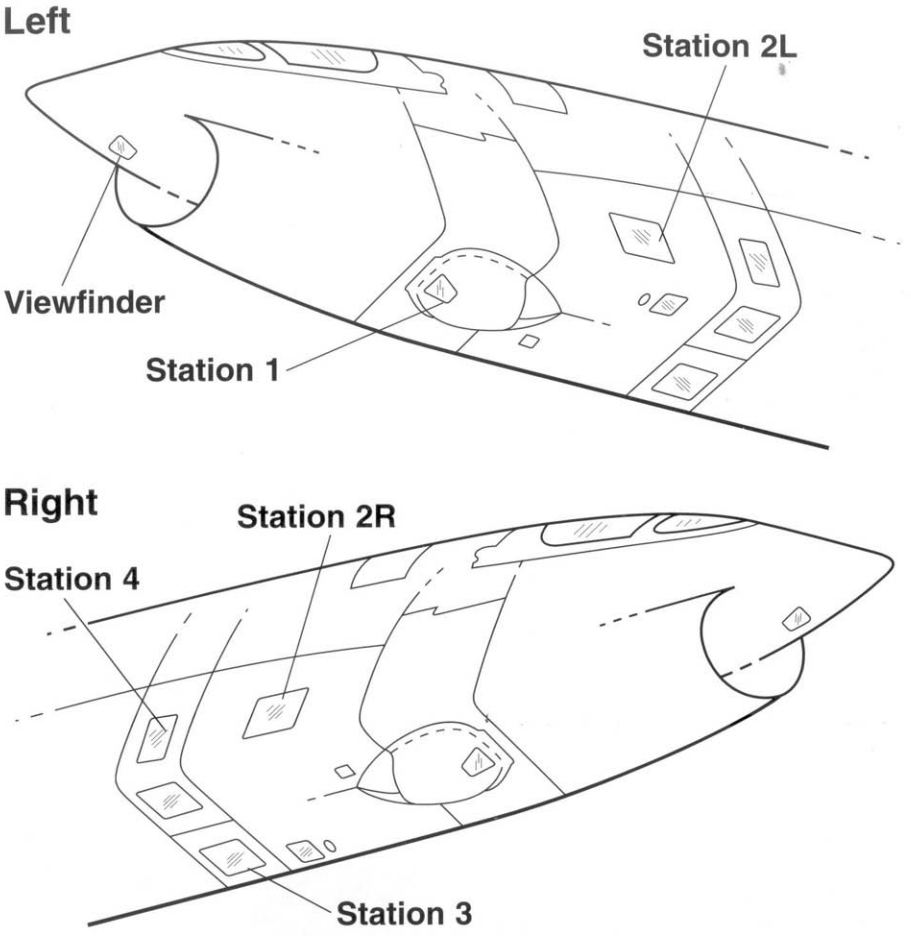
The RF-8 right console's front section was the same as on F-8 fighters. The aft section contained the UHF control panel, Identification Friend or Foe (IFF) control panel, TACAN panel, and compass panel. Interior cabin light controls are mounted on the raised panel at the rear. The Electronic Countermeasures (ECM) panel is on a box in front of the canopy actuator handle. The pouch on the canopy rail held the canopy gust support. (Author)





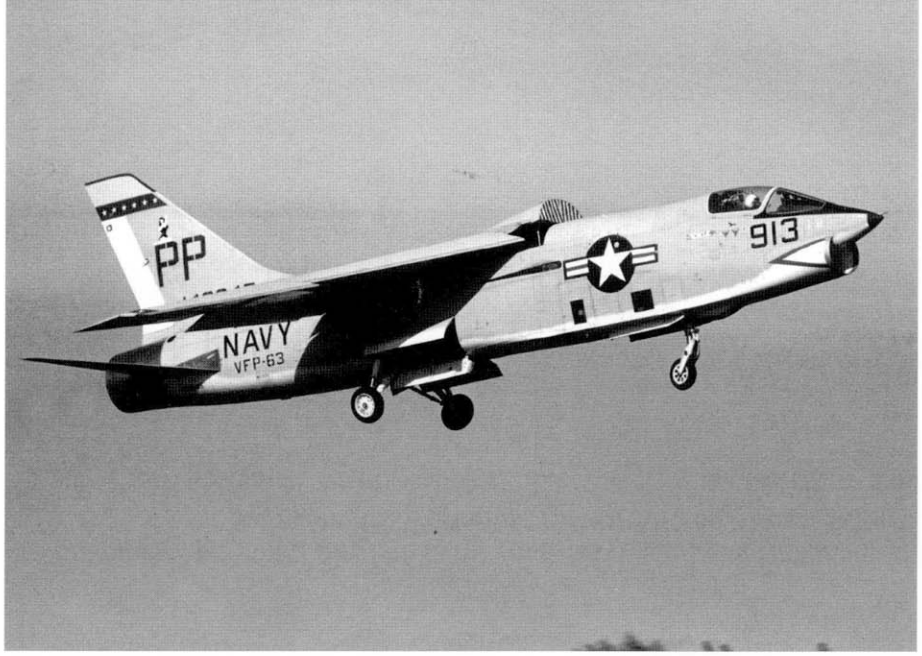
The Chicago Aerial CAX-12 oblique mounted camera could be mounted in camera stations 2, 3, and 4. This camera is mounted in station 4 on a rotatable mount at a 15° oblique angle. The CAX-12 had a variable lens focal length of 1.5 inches (38MM), 3 inches (76MM), 6 inches (152MM), or 12 inches (305MM). It carried 100 feet (30.5 M) of 2.25-inch (57MM) wide film that yielded 400 images. (Detail & Scale)

F8U-1P (RF-8) Camera Stations



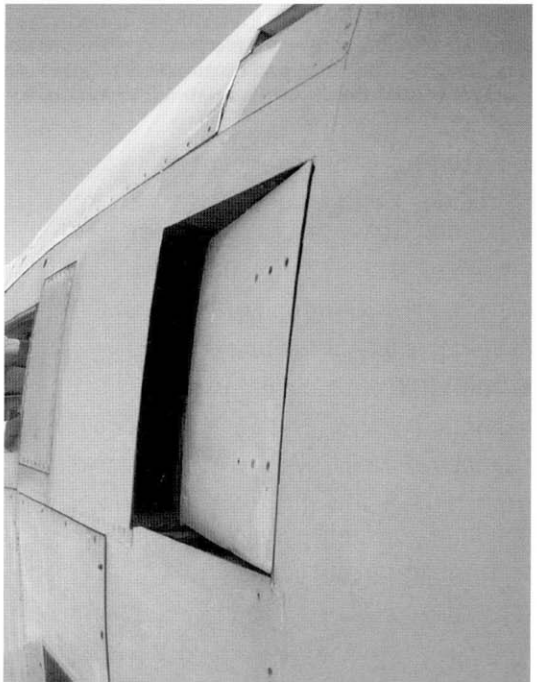
RF-8 Camera Stations and Cameras

Station	Cameras Employed
1	KB-10A, KA-45A, KA-46A
2	CAX-12
3 and 4	KA-40A, KA-45AQ, KA-46A, KA-32A, K-17C, CAX-12



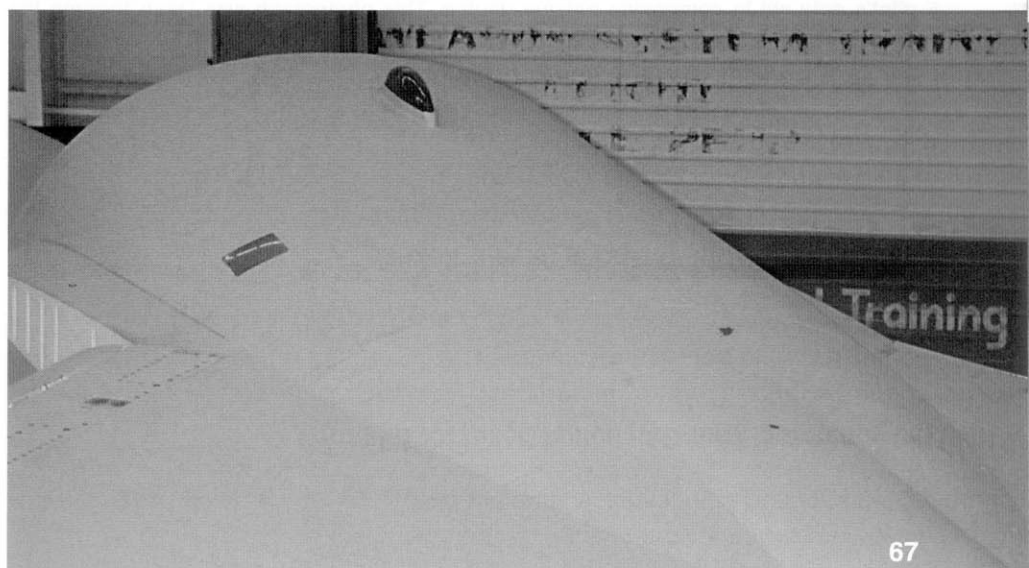
A VFP-63 RF-8A (PP-913/BuNo 146845) prepares to land at NAF Atsugi, Japan on 12 April 1963. Crusader reconnaissance variants employed the same variable incidence wing as the fighters. The RF-8A was not equipped with the aft fuselage ventral strakes, which were installed on the RF-8Gs (remanufactured RF-8As). (Matsuzaki)

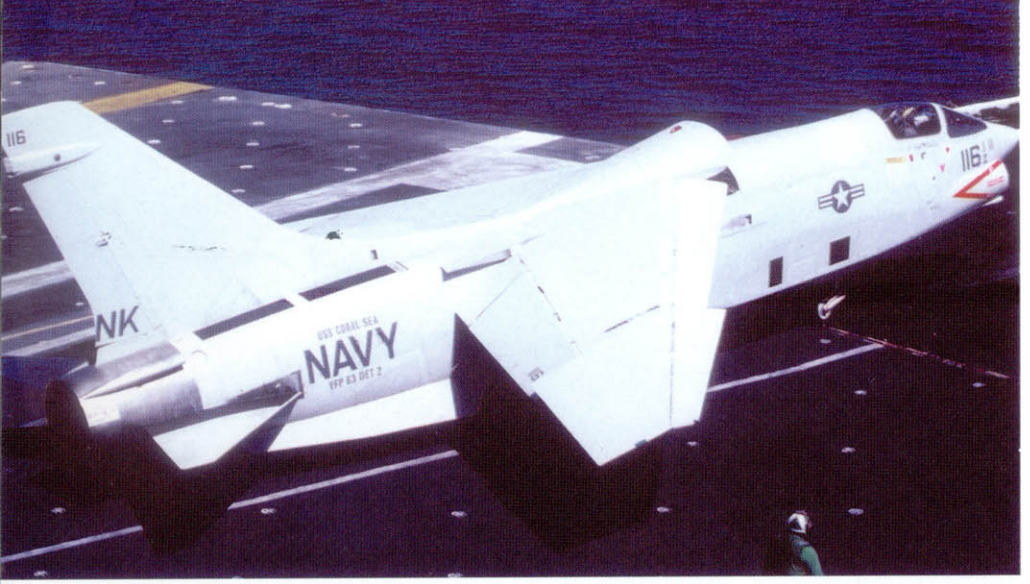
This RF-8G (NL-611/BuNo 145623) was assigned to VFP-63 at NAS Miramar, California. The Crusader has the streamlined ECM fairing on the vertical tail and the new, strengthened landing gear. These were features of the second RF-8G configuration. (Trombecky)



The RF-8's oil cooler vent and intake duct bypass door had a different configuration to that on F-8 fighters. This door was located on the left fuselage above and aft of camera station 3. The door had straight edges that hinged at the rear and pivoted inward. (Nick)

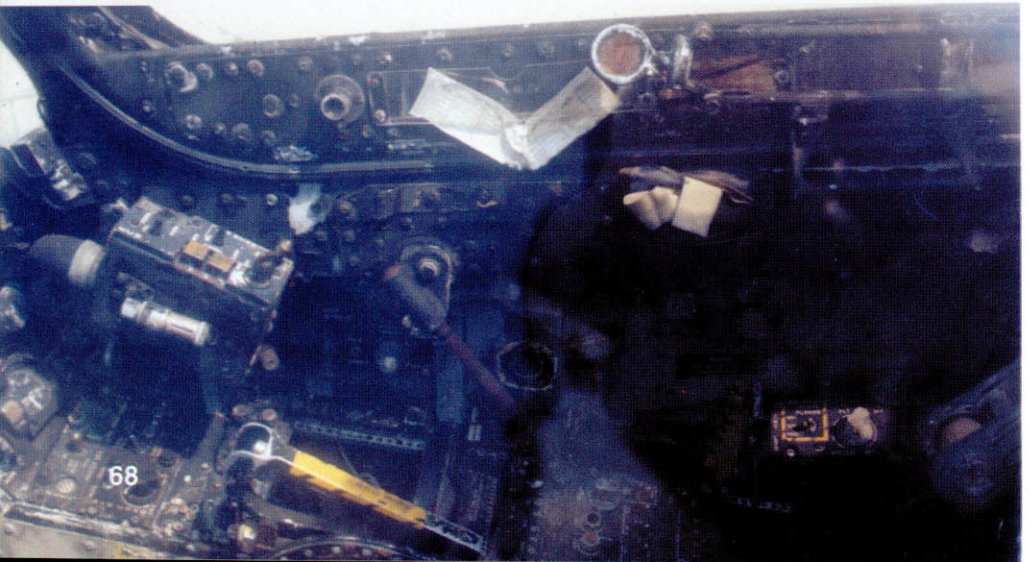
RF-8s had a different dorsal spine fairing contour than F-8s. This faring bulged at the wing shoulder to compensate for the flattened area under the forward fuselage. It created an area rule effect on fuselage aerodynamics. The bulge had a large sweeping radius that tapered aft into the fuselage spine. A Red anti-collision beacon is mounted atop this spine. (Weinel)

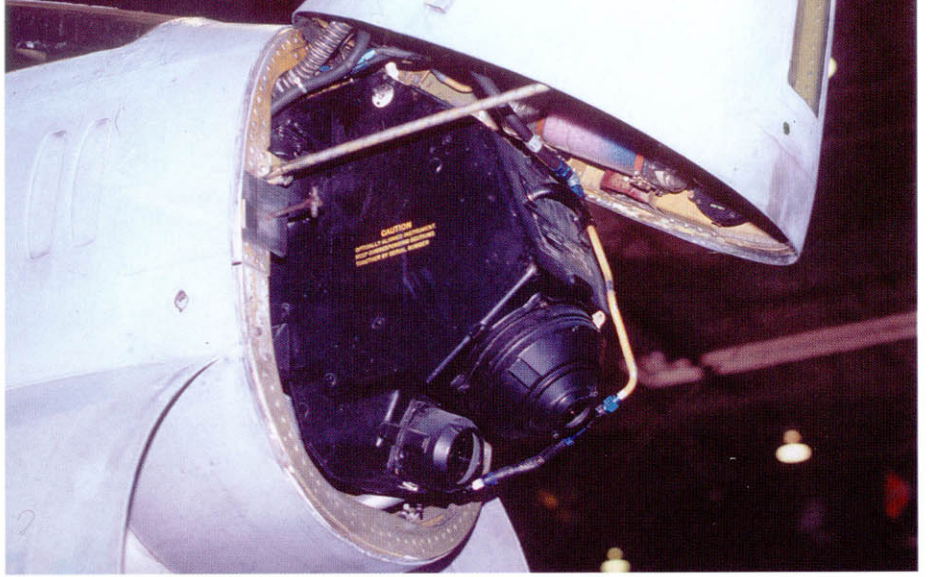




The remaining RF-8Gs entered the 'Power Eye' upgrade program in 1977. This consisted of upgraded avionics and the AN/ALR-45 ECM system. Additionally, they received the more powerful J57-P-420 engine, which required adding aft tail cone cooling scoops. This 'Power Eye' RF-8G (NK-116/BuNo 144618) was assigned to VFP-63 Detachment 2 aboard USS CORAL SEA (CV-43) in November of 1981. It is painted overall Light Gull Gray (FS36440), with Dark Sea Gray (FS36118) markings. (Clayton via Trombecky)

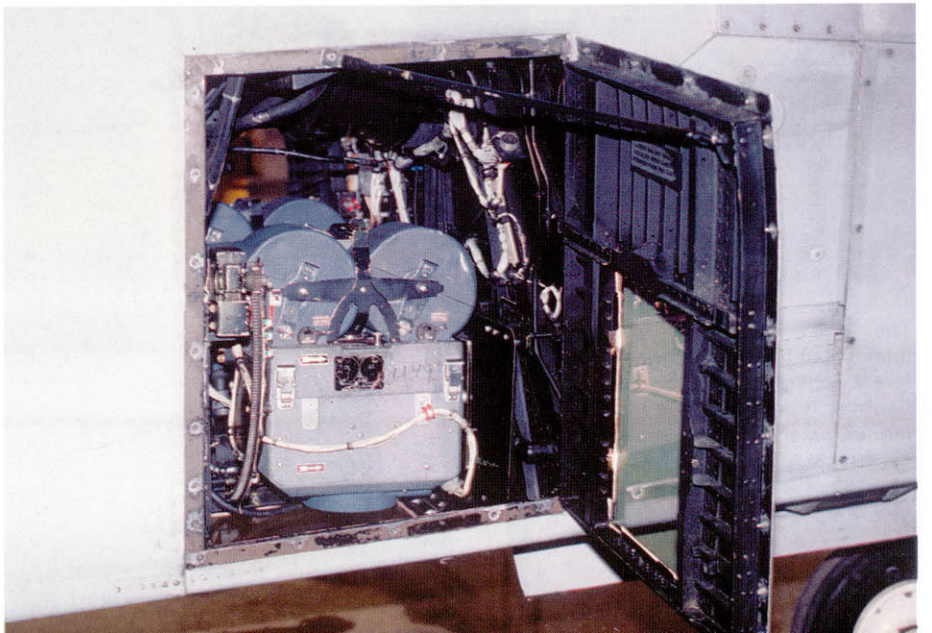
The right oblique (side) camera sight was mounted on the canopy frame. An identical assembly was fitted to the left canopy frame. The transparent Amber movable reticle was mounted in a ring connected to the canopy frame by a pantograph-style arm. This was the pilot's only aid in composing oblique photos. This photograph was taken through the canopy. (Nick)

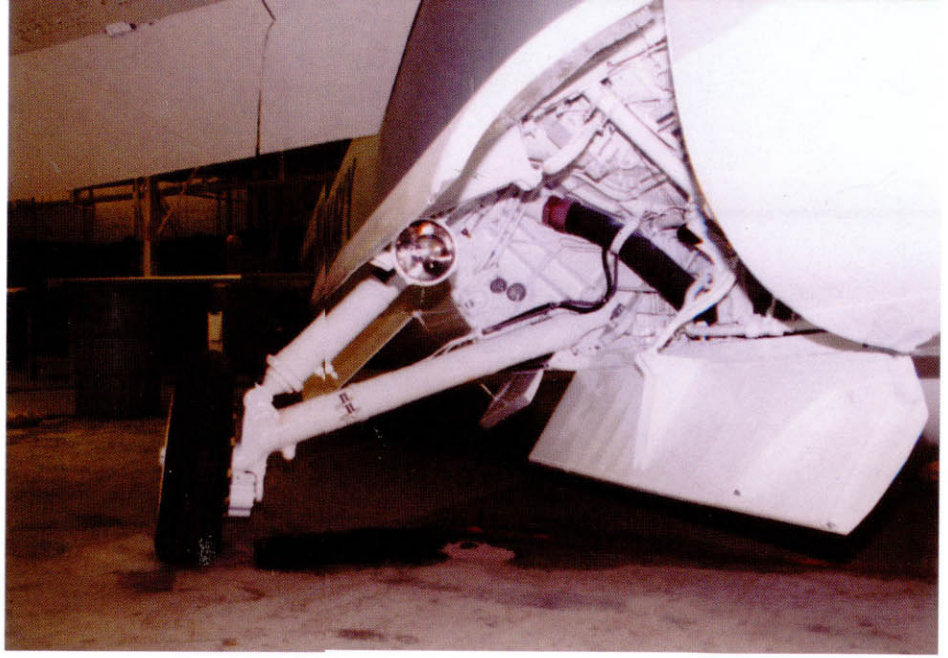




This RF-8G's nose compartment is opened to expose the viewfinder and dehydrator/filter assembly. This replaced the gun camera mounted in this position on F-8 fighters. The dehydrator dehumidified and circulated air in the viewfinder. These two lenses worked in conjunction with the 10° or 25° forward oblique cameras in station 1. (Detail & Scale)

Two KA-46A cameras were mounted in the rotatable mounting frame at stations 3 and 4. Each camera bay door had an attached support arm, which kept the door open. Fuselage camera station interiors were painted Flat black to reduce glare. (Detail & Scale)

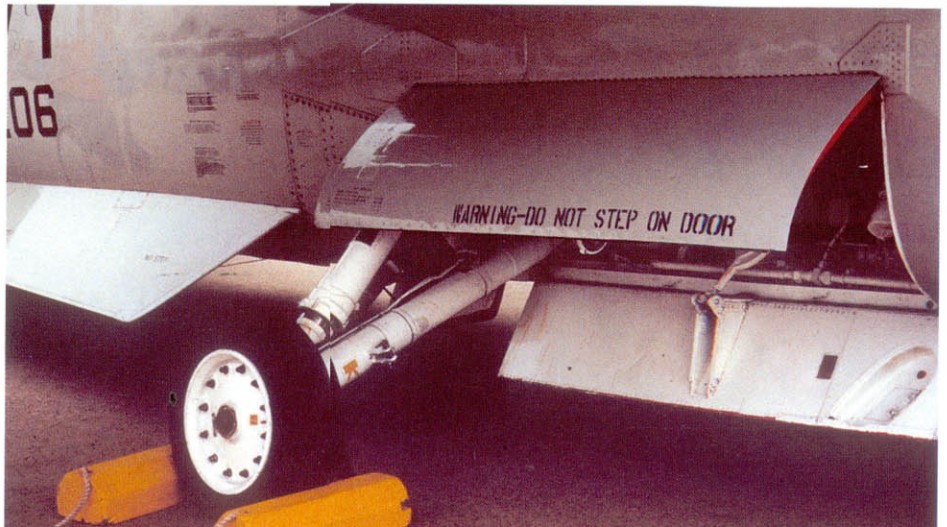




The RF-8's landing gear followed the same progression as on the F-8 fighters. A taxi light was mounted to the right side upper wheel well door. This RF-8G was direct from the paint shop and had yet to receive the Bright Red (FS31136) warning paint along the gear door edges. This aircraft is equipped with the later style strengthened landing gear. (Author)

The RF-8's approach indicator was moved to the left landing gear shock strut. This was required because the housing for camera station 1 eliminated the front landing gear flipper door. The indicator lamps were (from top to bottom) Green, Yellow, and Red. This RF-8G is also equipped with the late style landing gear. (Trombecky)

Reinforcement panels were added to both fuselage sides at the forward and aft corners when RF-8As were remanufactured into RF-8Gs. A single panel was added to the forward corner. Two plates added to the rear distributed the stresses transferred by the landing gear bulkhead. (JEM)

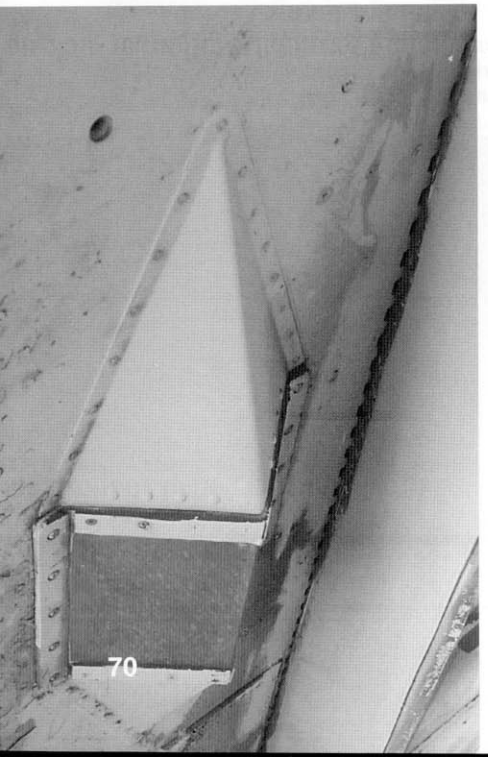


The RF-8G received the integral engine starter probe modification when it was remanufactured from RF-8A standard. The new style starter probe was identified by the left hinge's straight edge and it was located just aft of the left landing gear. (JEM)

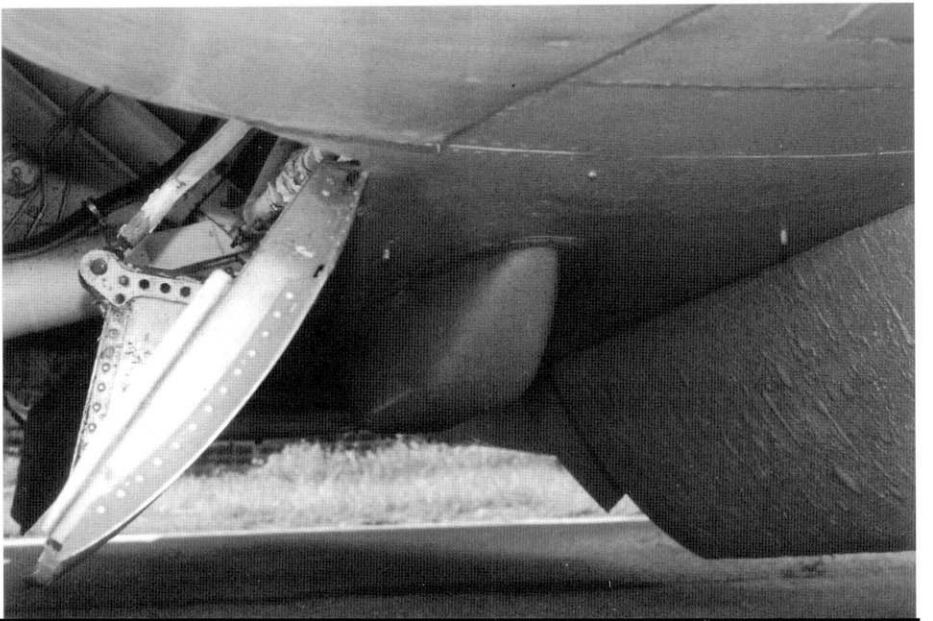
The RF-8G's lower forward fuselage had a Red fuselage marker light mounted aft of camera station 4. Two triangular prism windows were occasionally mounted below the fuselage at stations 2R and 4. These windows accommodated the Fairchild KA-66 pan camera. (Nick)

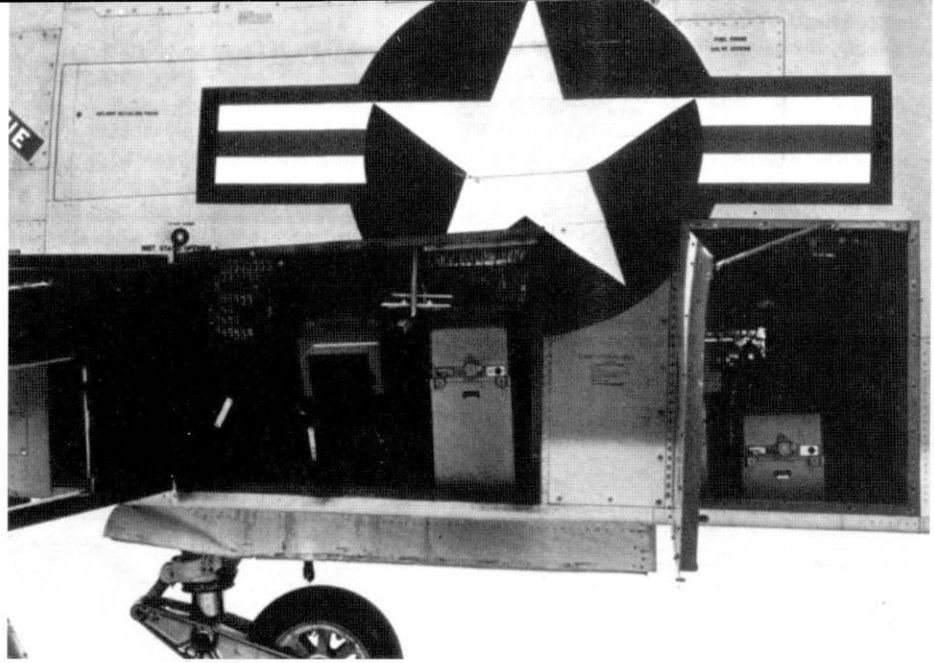
The prism window for the station 4 KA-66 pan camera replaced the flat window panel mounted on the lower fuselage. This prism's front was higher than its aft end. It formed a 15° angle to the fuselage undersurface. The prism was mounted in front of the lower fuselage marker light. (Nick)

The AN/ARA-25 Ultra High Frequency (UHF) Direction Finder (DF) radio navigation antenna was located on the lower fuselage between the landing gear doors. Wheel well drain vents protruded from the fuselage undersurface just inboard of each landing gear door hinge. (Nick)

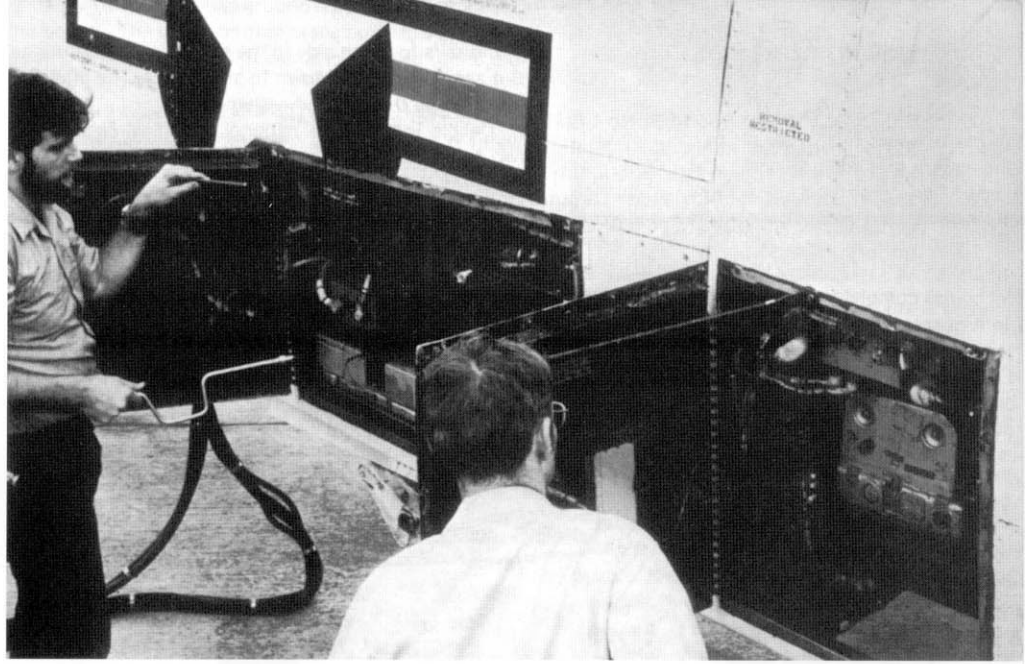


The prism for the KA-66 pan camera at station 2R was located in front of the station 4 prism. A triangular fairing was placed at the prism's front and rear to improve aerodynamics. The leading edge fairing was longer than the aft fairing. (Nick)

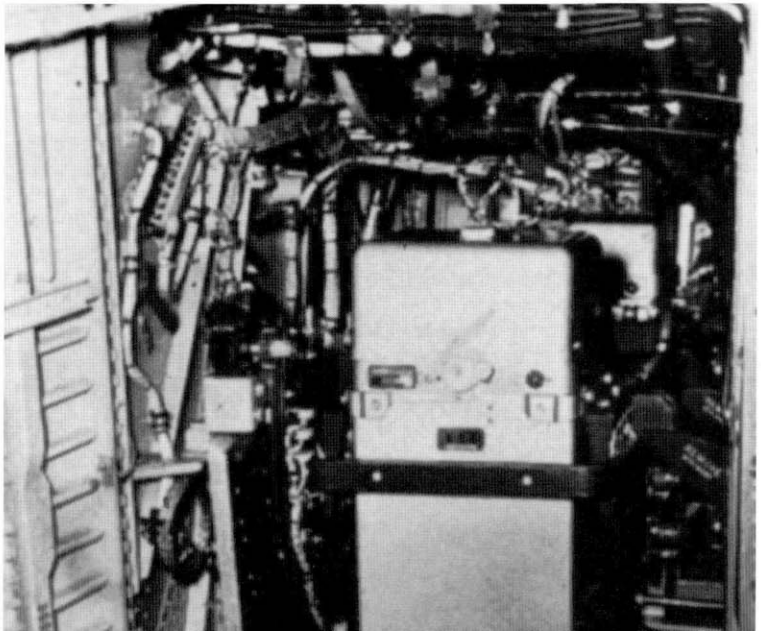




Access doors are open on stations 2 (left of picture) and 3 on the lower left fuselage of this early RF-8A. The forward-hinged doors allowed technicians to easily remove and replace cameras and film magazines. The rectangular In-flight Refueling Probe (IRP) door is located immediately above stations 2 and 3. (US Navy)

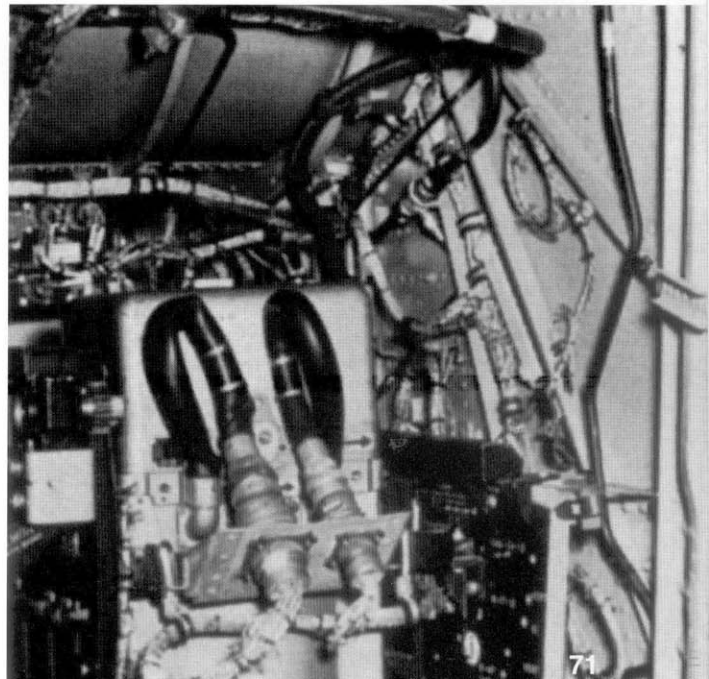


Two ground crewmen service cameras mounted in stations 2 and 3 on this VFP-306 RF-8G. The RF-8A's four camera stations were unchanged when these aircraft were remanufactured to RF-8G standard between 1965 and 1970. A vertically mounted camera is mounted in station 3. (US Navy)

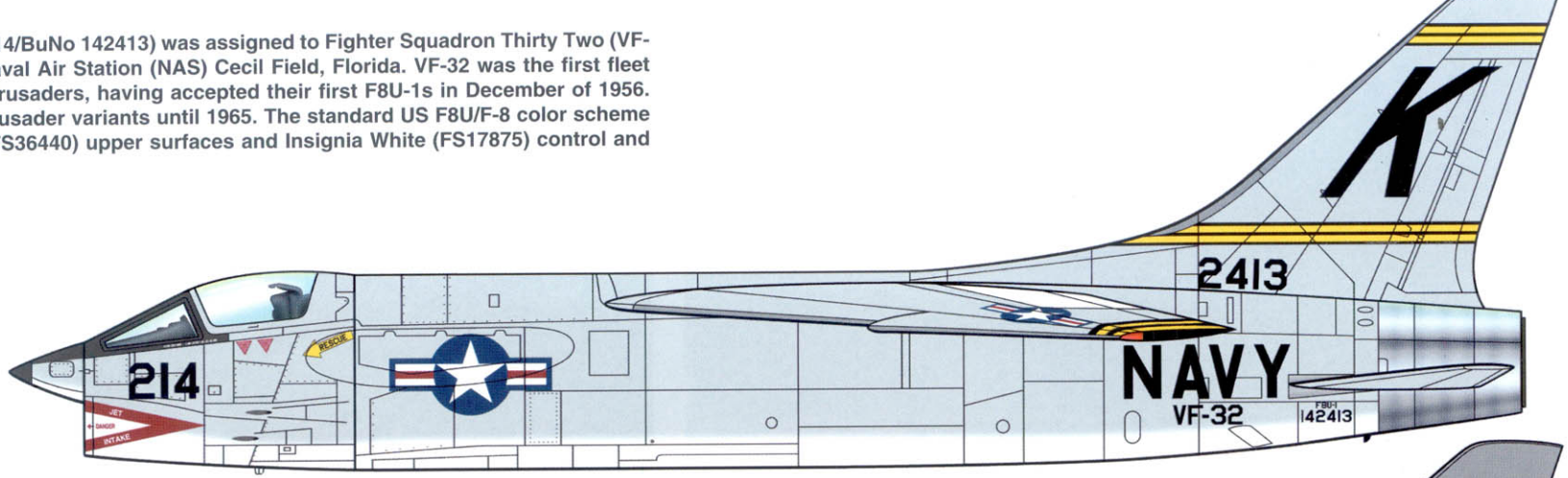


(Left) A film magazine is loaded into station 3 of the RF-8. Black and White film was used for these cameras, since this was less expensive and faster to develop than color film. Each film magazine was easily removed after the mission for rapid film development, which allowed for analysis of the images soon after landing.

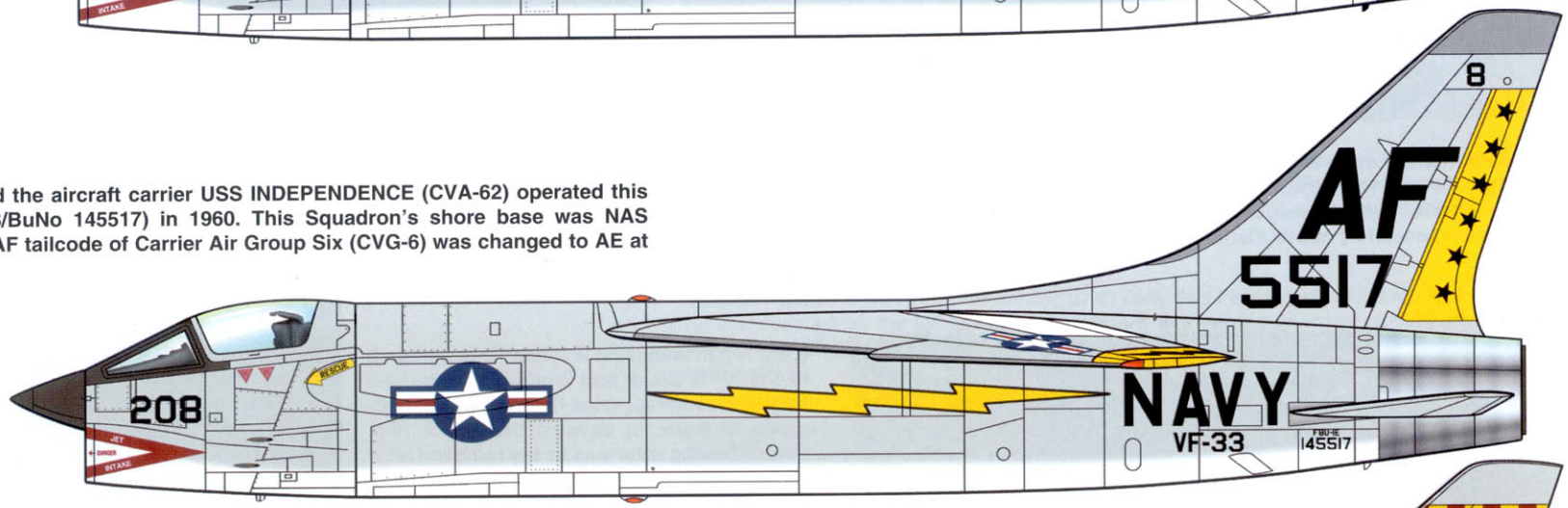
(Right) Various hydraulic pipes and electrical cables wind around a camera and magazine installed in station 4 on the RF-8's right side. Hydraulic piping supported aircraft control functions, while electrical wiring supplied power for the camera. RF-8s usually employed six camera installations: one forward facing, two vertical, and three trimetrogon. The latter type used one vertically mounted camera and two others taking high oblique images 90° to the line of flight and inclined 60° from vertical.



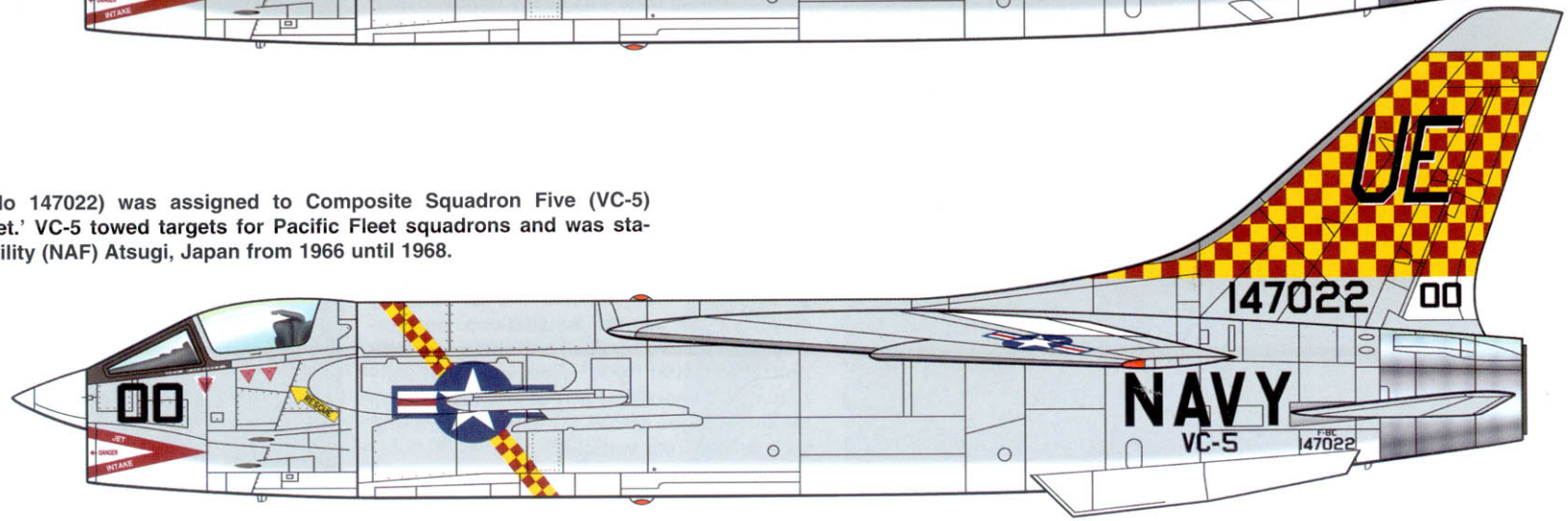
This F8U-1 (F-8A) (K-214/BuNo 142413) was assigned to Fighter Squadron Thirty Two (VF-32) 'Swordsmen' at Naval Air Station (NAS) Cecil Field, Florida. VF-32 was the first fleet squadron to receive Crusaders, having accepted their first F8U-1s in December of 1956. This Squadron flew Crusader variants until 1965. The standard US F8U/F-8 color scheme was Light Gull Gray (FS36440) upper surfaces and Insignia White (FS17875) control and undersurfaces.



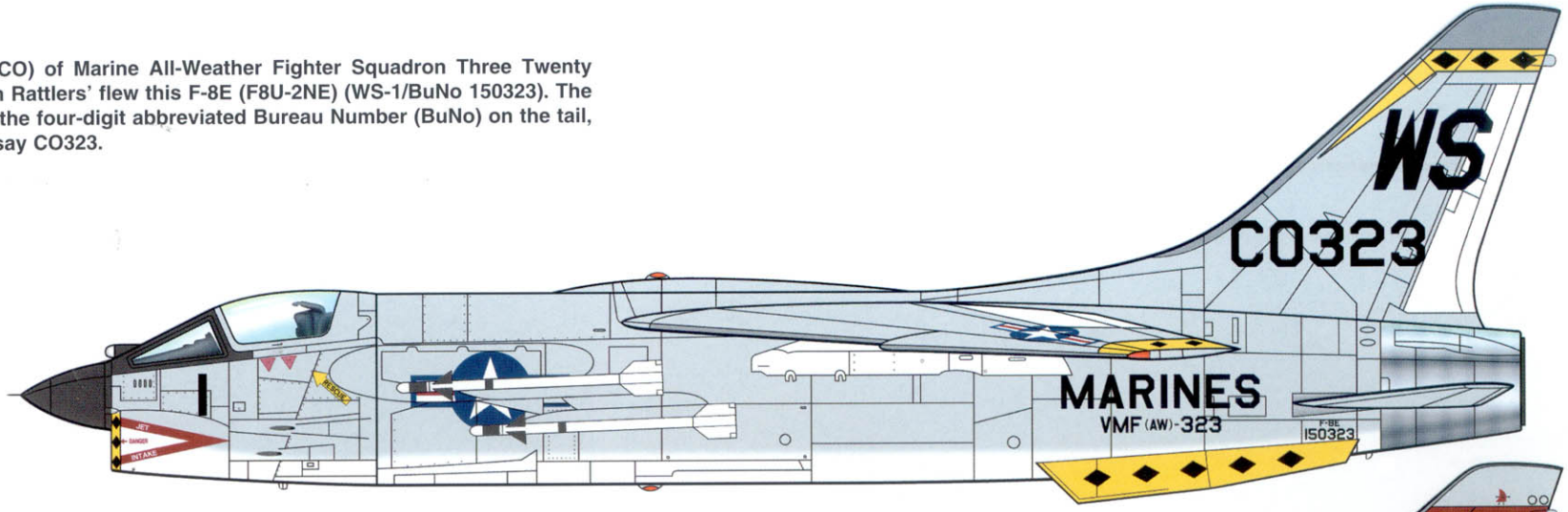
VF-33 'Tarsiers' aboard the aircraft carrier USS INDEPENDENCE (CVA-62) operated this F8U-1E (F-8B) (AF-208/BuNo 145517) in 1960. This Squadron's shore base was NAS Oceana, Virginia. The AF tailcode of Carrier Air Group Six (CVG-6) was changed to AE at the beginning of 1963.



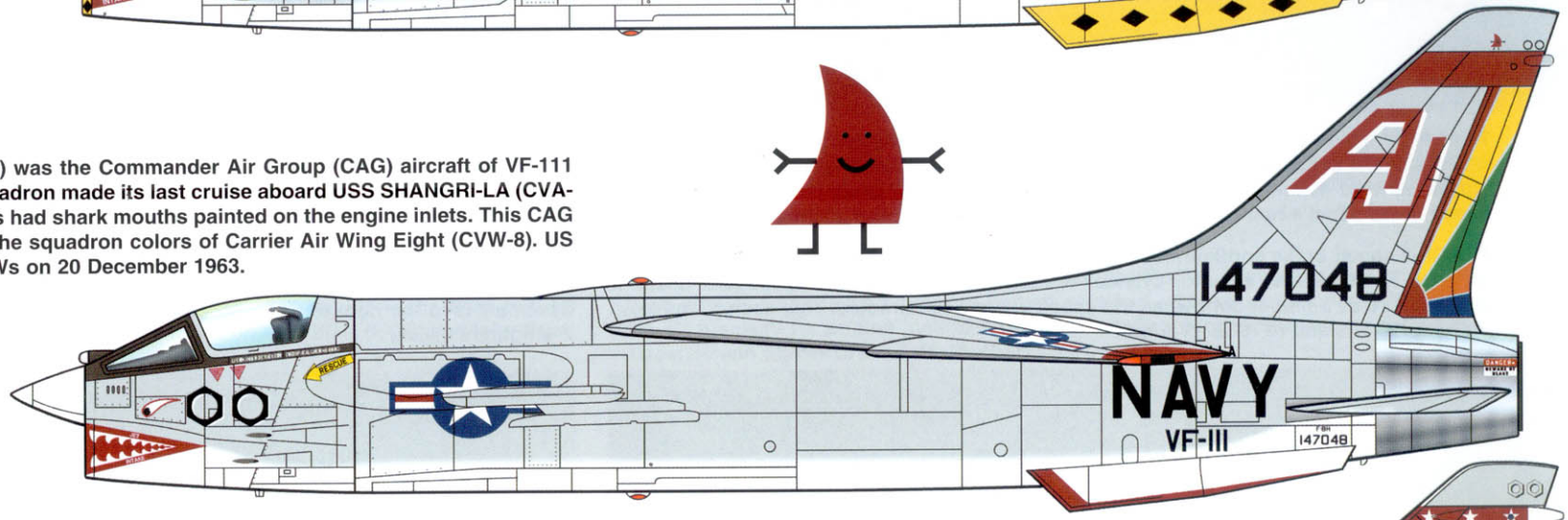
This F-8C (UE-00/BuNo 147022) was assigned to Composite Squadron Five (VC-5) 'Workhorse of the Fleet.' VC-5 towed targets for Pacific Fleet squadrons and was stationed at Naval Air Facility (NAF) Atsugi, Japan from 1966 until 1968.



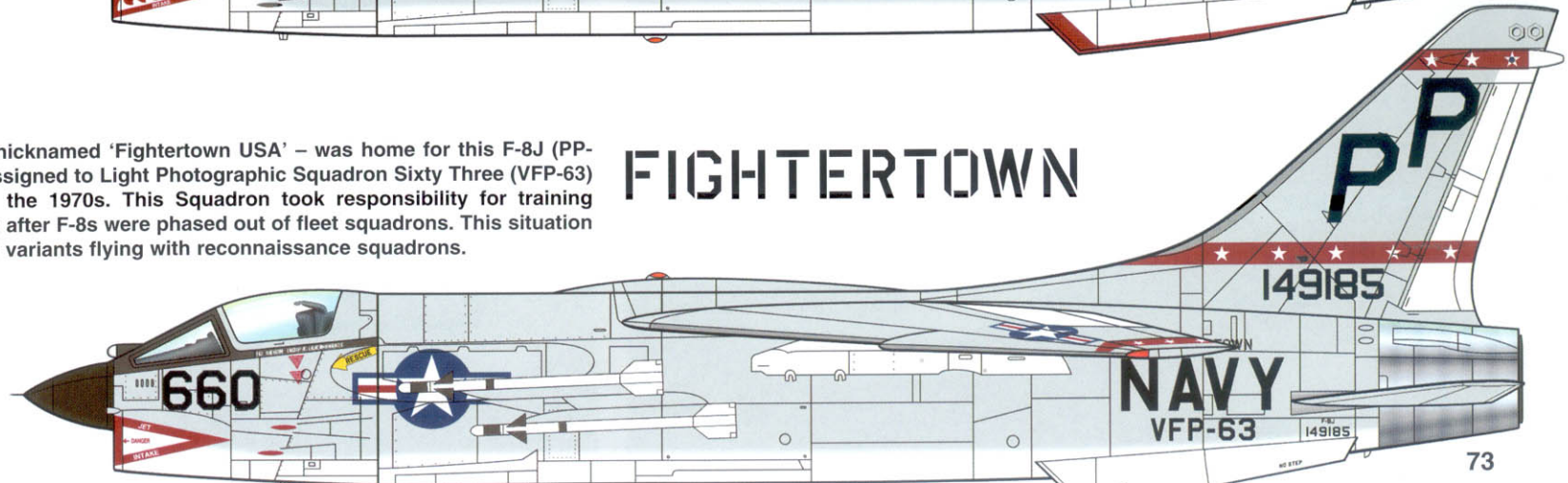
The Commanding Officer (CO) of Marine All-Weather Fighter Squadron Three Twenty Three (VMF[AW]-323) 'Death Rattlers' flew this F-8E (F8U-2NE) (WS-1/BuNo 150323). The letter C was painted before the four-digit abbreviated Bureau Number (BuNo) on the tail, which made this appear to say CO323.



This F-8H (AJ-00/BuNo 147048) was the Commander Air Group (CAG) aircraft of VF-111 'Sundowners' in 1970. The Squadron made its last cruise aboard USS SHANGRI-LA (CVA-38) that year. VF-111 Crusaders had shark mouths painted on the engine inlets. This CAG aircraft's rudder is painted in the squadron colors of Carrier Air Wing Eight (CVW-8). US Navy CVGs were renamed CVWs on 20 December 1963.



NAS Miramar, California – nicknamed 'Fightertown USA' – was home for this F-8J (PP-660/BuNo 149185). It was assigned to Light Photographic Squadron Sixty Three (VFP-63) 'Eyes of the Fleet' during the 1970s. This Squadron took responsibility for training Reserve F-8 and RF-8 pilots after F-8s were phased out of fleet squadrons. This situation resulted in Crusader fighter variants flying with reconnaissance squadrons.



The RF-8's speed brake had a different shape from that fitted to Crusader fighters. This was due to the flattened fuselage undersurface. The brake had a straight leading edge that curved upward at the outer edges. The longitudinal outer edges curved inward at the speed brake panel's rear to conform to the wider fuselage cross section. (Vought)

The RF-8 speed brake fit into a shallow well located just in front of the main landing gear wells. A single actuator arm extended and retracted this brake. RF-8 speed brakes were not part of the rocket packs fitted to early Crusader fighters. (Vought)

The RF-8 speed brake configuration was highly similar to the later style brakes installed on F-8s. The hydraulic actuator cylinder retracted into the lower fuselage keel beam. It was covered by a flipper door when the speed brake was retracted. This design was used on both RF-8As and RF-8Gs. (Vought)

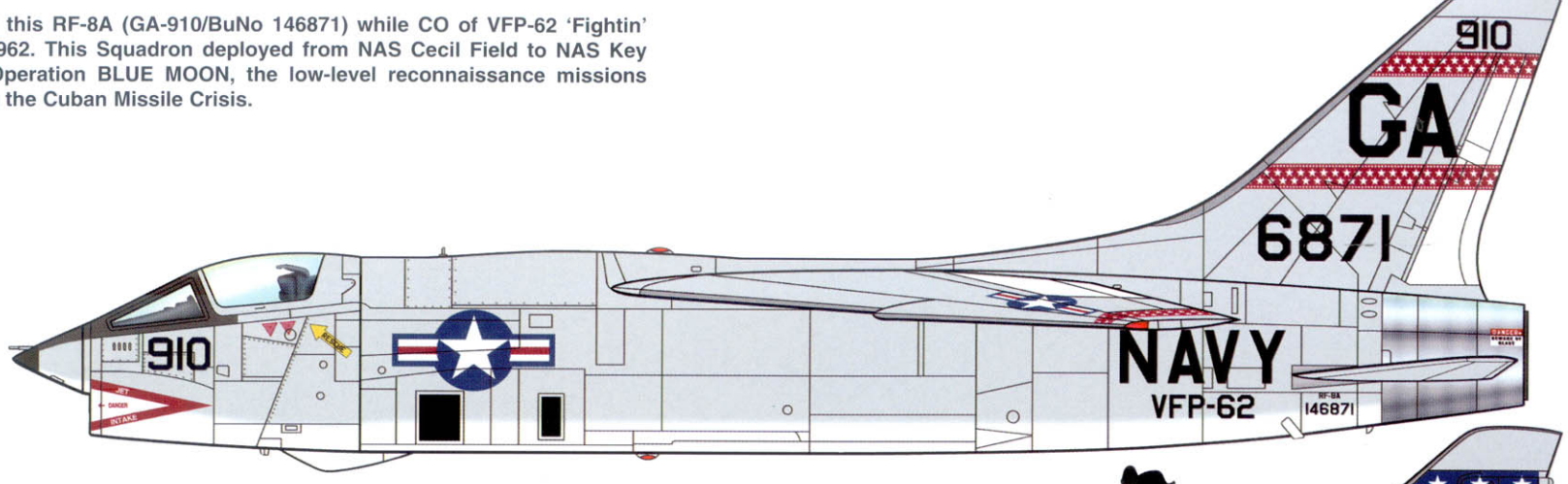
A catapult attachment pin and socket was located on the lower fuselage centerline. The pin transmitted the catapult's thrust to the aircraft structure. The forward section of this assembly is to the right of the photograph. This design was identical on both RF-8s and F-8 fighters. (Nick)

Four VFP-61 F8U-1Ps (from left, PP-921, PP-922, PP-924, and PP-925) fly over their home at NAS Miramar. This Squadron was the initial F8U-1P (RF-8A) operational unit, having received its first Crusaders in September of 1957. VFP-61 was re-designated Composite Photographic Squadron Sixty Three (VCP-63) in 1959 and then VFP-63 in July of 1961. This Squadron was disestablished when it retired the RF-8 in June of 1982. The lead aircraft displays its modex (921) and tailcode (PP) on the upper right wing. This is standard on US Navy and Marine carrier-capable aircraft and allows for easy identification on the flight deck. (Vought)

The RF-8G received the more powerful J57-P-20 engine and the aft fuselage ventral strakes, which enhanced high speed stability. These strakes ran along the right and left lower aft fuselage sides in the same fashion as those on the F8U-2 (F-8C) and later fighter variants. (Author)

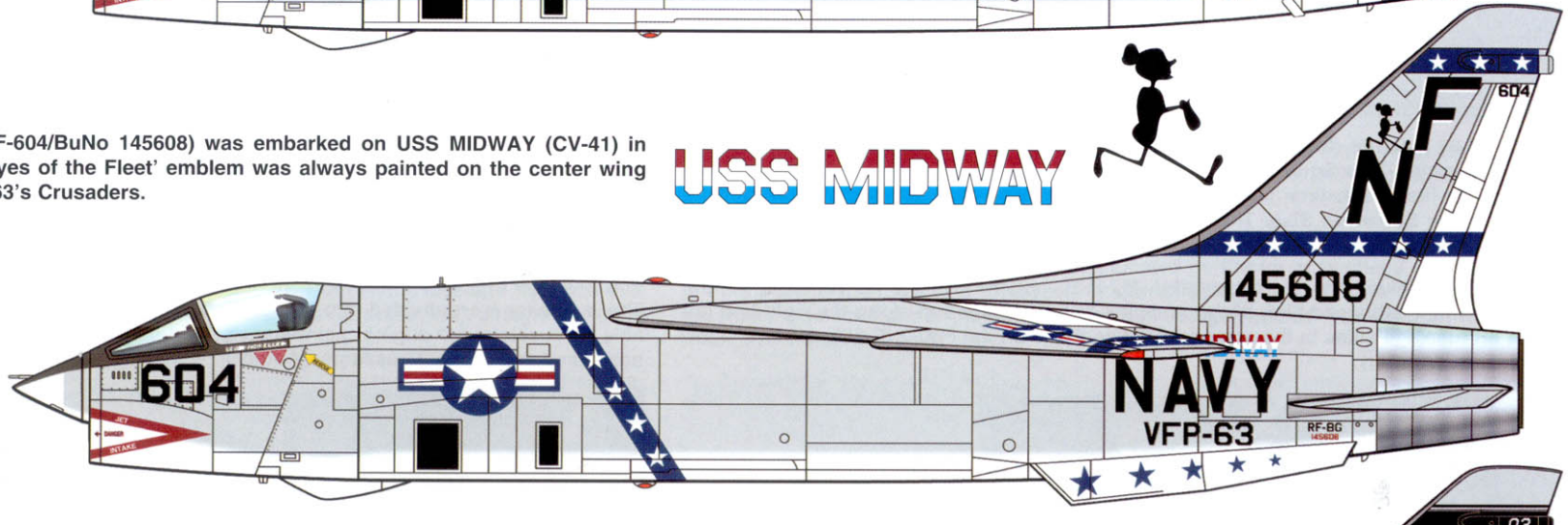
The fuselage fuel dump mast was incorporated into the left ventral strake's aft section. These strakes were divided into fore and aft sections, which accommodated the removable aft fuselage for engine maintenance. This configuration was used on both reconnaissance and fighter Crusaders. (Author)

Cdr William Ecker flew this RF-8A (GA-910/BuNo 146871) while CO of VFP-62 'Fightin' Photo' in October of 1962. This Squadron deployed from NAS Cecil Field to NAS Key West, Florida during Operation BLUE MOON, the low-level reconnaissance missions flown over Cuba during the Cuban Missile Crisis.



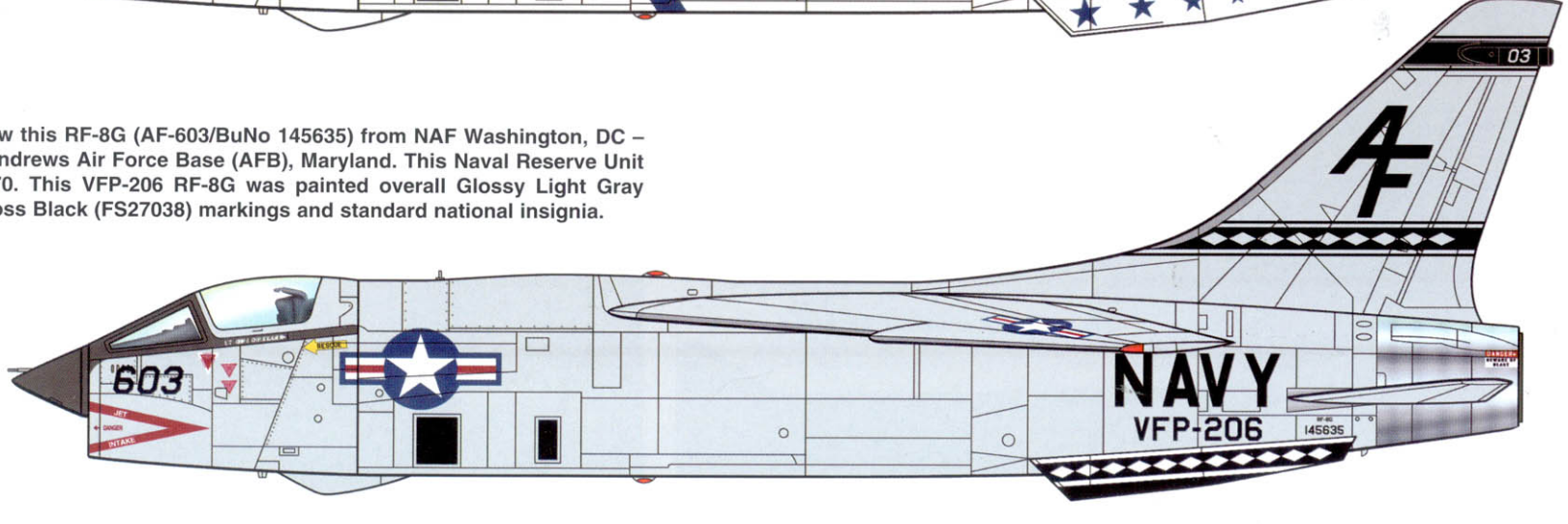
This VFP-63 RF-8G (NF-604/BuNo 145608) was embarked on USS MIDWAY (CV-41) in 1976. The menacing 'Eyes of the Fleet' emblem was always painted on the center wing front bulkhead of VPF-63's Crusaders.

USS MIDWAY

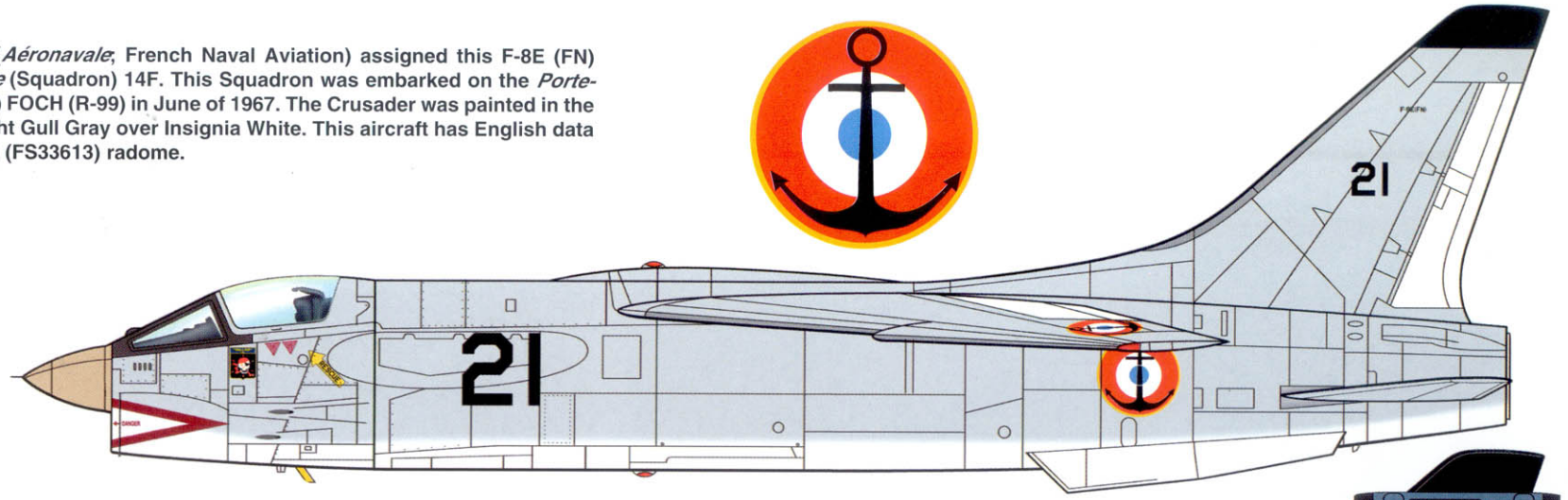


EYES OF THE FLEET

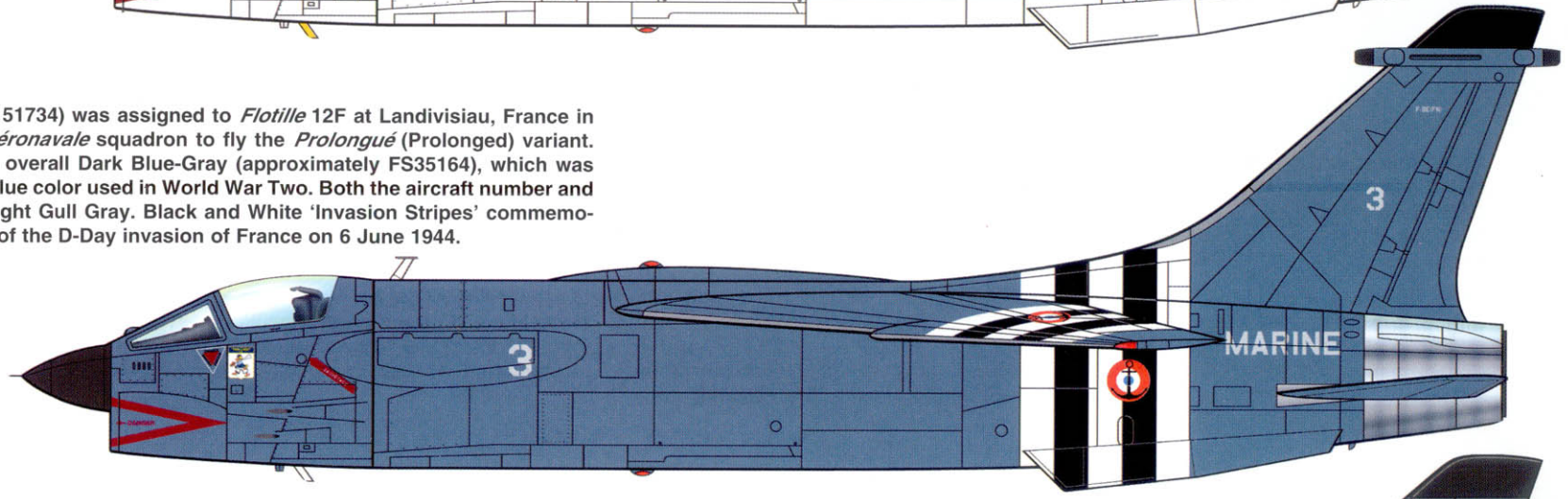
VFP-206 'Hawkeyes' flew this RF-8G (AF-603/BuNo 145635) from NAF Washington, DC – the Navy's section of Andrews Air Force Base (AFB), Maryland. This Naval Reserve Unit was established in 1970. This VFP-206 RF-8G was painted overall Glossy Light Gray (FS16440), with Semigloss Black (FS27038) markings and standard national insignia.



The *Aéronautique Navale* (*Aéronavale*; French Naval Aviation) assigned this F-8E (FN) (21/BuNo 151752) to *Flotille* (Squadron) 14F. This Squadron was embarked on the *Porte-avions* (PA; Aircraft Carrier) FOCH (R-99) in June of 1967. The Crusader was painted in the standard US scheme of Light Gull Gray over Insignia White. This aircraft has English data stencils and a Radome Tan (FS33613) radome.



This F-8E (FN) P (3/BuNo 151734) was assigned to *Flotille* 12F at Landivisiau, France in 1994. This was the only *Aéronavale* squadron to fly the *Prolongué* (Prolonged) variant. The Crusader was painted overall Dark Blue-Gray (approximately FS35164), which was similar to the British PRU Blue color used in World War Two. Both the aircraft number and MARINE (NAVY) title are Light Gull Gray. Black and White 'Invasion Stripes' commemorated the 50th anniversary of the D-Day invasion of France on 6 June 1944.



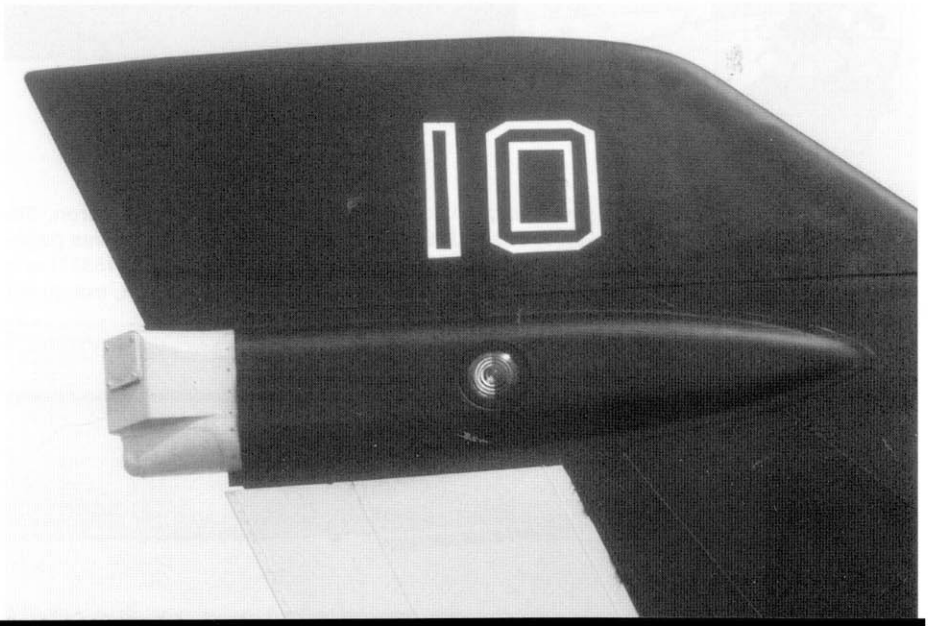
This F-8H (316/BuNo 148628) was assigned to the 7th Tactical Fighter Squadron, 5th Fighter Wing, Philippine Air Force at Basa Air Base, Luzon, the Philippines. It was painted in a two-tone 'wrap around' camouflage scheme of Glossy Dark Gray (FS15327) and Glossy Neutral Gray (FS16320) adopted in 1982. All markings were Flat Black, except for the full color national insignia on the wings and fuselage.

RF-8Gs carried three different paint schemes during their service life. They were originally in the Light Gull Gray (FS36440) over Insignia White (FS17875) scheme. This VFP-206 Crusader (AF-600/BuNo 146860) is finished in overall Light Gull Gray, with Flat Black (FS37038) markings. It became the last operational US Crusader, ending its career on 29 March 1987. (JEM)

This RF-8G (AF-601/BuNo 146860) is finished in the final US Crusader scheme. The low-visibility Tactical Paint Scheme (TPS) consisted of Dark Compass Gray (FS36320) upper surfaces and Light Compass Gray (FS36375) undersurfaces. Markings were Light Gray (FS36495) and Blue Gray (FS35237). (Chuddy)

RF-8s had three different vertical tail antenna configurations. The first consisted of a fin without an antenna fairing. This RF-8G (BuNo 145647) demonstrates the second configuration, which was developed to accommodate the 'Shoe Horn' Electronic Countermeasures (ECM) system. The system included a small cylindrical antenna on the aft tail section and a large rectangular antenna fairing on the fin's leading edge. (Trombecky)

The final RF-8 tail configuration had a streamlined tapered antenna fairing mounted above the rudder and extending aft. The White navigation light was mounted in this fairing. The fairing terminated with two rectangular pads mounted at 45° angles with square sensors mounted on the outer face. (Trombecky)



The RF-8's wing and wingtip configuration was the same as for the Crusader fighters. The left wing has Red lenses illuminated by bulbs within the lens covers. One light was mounted at the outer forward corner, while a second light was located toward the wingtip's aft end. (JEM)

The right wingtip was similar in configuration to the left, except for the color of the lenses. The forward lens was Green, while the wingtip formation light was Blue. The wingtip upper surface had inward facing NO STEP warning stencils, while the underside had outward facing NO PUSH warnings. Both were directed at maintenance personnel and others near this aircraft. (JEM)

The RF-8's vertical tail was basically the same configuration as on the F-8; however, the aft facing ECM fairing atop the RF-8's rudder had a different configuration. The area behind the Unit Horizontal Tail (UHT) was often left unpainted because the fuselage expanded at elevated temperatures and rubbed against the UHT. (JEM)

Feet Wet!

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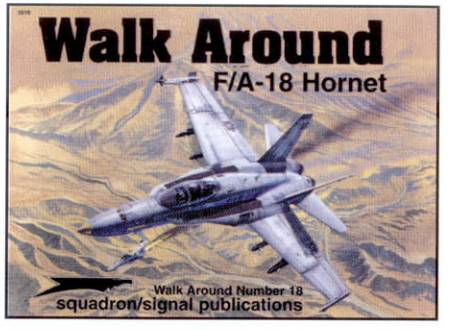
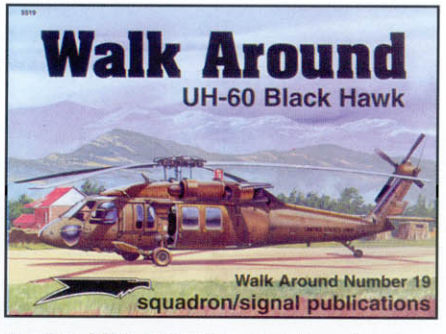
5504 F4F Wildcat

5509 F6F Hellcat

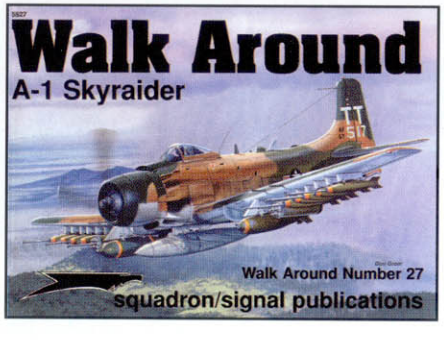


5518 F/A-18 Hornet



5519 UH-60 Black Hawk

5525 TBF/TBM Avengers



5527 A-1 Skyraider

5533 SBD Dauntless

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